

**Microsoft's .Net services explained**

Microsoft-hosted developer tools for creating cloud-based applications hit beta stage. **Page 12.**

**NETWORKWORLD**  
**CLEAR CHOICE****Test: Novell's SLES 11**

Its new features home in on improved management and integrated virtualization. **Page 26.**

# NETWORKWORLD

Maximize your return on IT ■ [www.networkworld.com](http://www.networkworld.com)

April 27, 2009 ■ Volume 26, Number 16

**vSphere debuts**

Virtualization upgrade helps VMware maintain its competitive edge, but concerns about vendor lock-in persist. **Page 12.**

**The FBI as an ethical hacker?**

Columnist Scott Bradner is not sure of the answer to law enforcement's problems, but hopes these efforts don't let the bad guys take over machines around the world. **Page 14.**

**HP takes aim at Cisco with BladeSystem Matrix**

Company airs converged software, server, storage and network platform. **Page 34.**

**ITRoadmap****Upcoming ITR**

One-day Network World IT event is coming to a city near you! The event features 10 IT tracks; vendor expo; peer case studies. Register at: [www.nwdocfinder.com/8728](http://www.nwdocfinder.com/8728)

## A look back at Sun's rise and fall

BY JON BRODKIN

Oracle's surprising \$7.4 billion deal to purchase Sun last week gives Larry Ellison and crew a big stake in the hardware market as well as control over Java and other well-known open source technologies. But it also spells the end of an independent Sun, one of Silicon Valley's most prominent companies.

How did it all come to this for the 27-year-old Sun, regarded as one of the industry's great innovators? The dot-com crash at the start of this decade is frequently cited as the beginning of the end for Sun, and for good reason. But acquisition missteps and a failure to monetize key products such as Java also hastened Sun's descent.

"The dot-com bust hurt everybody but it's arguable that Sun was hurt most because it had profited so much in the run up to the boom in the first place, and hadn't grown its business out as deeply as IBM and some others," says Pund-IT analyst Charles King.

Sun's Sparc servers with the Solaris operating system were snatched up by dot-com start-ups because of their stability and flexibility in deploying

**See Sun, page 16**

## Cloud security fears cast shadow at RSA

BY TIM GREENE

SAN FRANCISCO — Two words — cloud security — dominated discussion and drove the action last week at RSA Conference 2009.

Throughout the event, attendees were warned of a range of danger areas in cloud computing services, including data loss and integrity, compliance, liability, reliability, authentication and information life-cycle management.

"It is a security nightmare, and it can't be handled in traditional ways," said Cisco CEO John Chambers in his keynote address. "You'll have no idea what's in the corporate data center."

Cloud security clearly lags, experts said, advising that until it catches up, businesses need to understand the dangers, weigh them against the benefits and

■ **Got some burning security questions eating at you? Read our answers, particularly on the topic of security in the cloud. **Page 18.****

exercise aggressive risk management.

But there are promises of help from vendors whose conference announcements were tailored to address some of the cloud shortcomings. Cisco, for instance, rolled out a cloud-based security service that pulls threat data from around the Internet and pushes it to users.

This is similar to an approach touted at the show by Trend Micro ahead of a formal announcement coming next month.

**See RSA, page 20**

## SECURITY TRAINING 101

How to create an effective end-user security awareness program. **Page 30**



“

TODAY, USERS ARE MORE AWARE OF EXISTING THREATS, BUT THREATS ARE MORE SOPHISTICATED AND THEY MIGRATE FASTER.”

MAX REISSMÜLLER, senior manager of IT infrastructure and operations, Pioneer Electronics in Long Beach, Calif.



# Everything you need for

Limited Time Offer: Get 50%  
off and more for the first  
6 months when you sign  
up for a 1 year plan!  
Visit [www.1and1.com](http://www.1and1.com)  
for details!



1-877-GO-1AND1





# a successful website

## DOMAIN NAMES

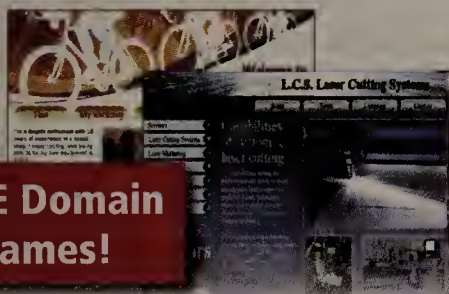
# .biz

Register your business website and save!  
Protect your personal information – private  
domain registration is included for FREE!

**.biz domains** ~~\$8.99/year~~  
now **\$3.99/first year\***

**Now  
50%  
off**  
Offer extended

## WEB HOSTING



**FREE Domain  
Names!**

The 1&1 Business Package gives you everything  
you need for a professional website. 3 domains,  
site-building tool, 2,500 e-mail accounts,  
search advertising vouchers and more!

**Starting at** ~~\$9.99/month~~  
now **\$4.99/mo.\*** (first 6 months)

**Now  
50%  
off**  
Offer extended

## PREMIUM SERVERS



Designed specifically for high performance needs, these  
top-of-the-line AMD™ processors feature energy  
efficient technology, reducing costs and environmental  
impact with increased performance-per-watt. 1&1  
matches 100% of the energy consumed in our  
data center with Renewable Energy Certificates.

**Starting at** ~~\$199.99/month~~  
now **\$99.99/mo.\*** (first 6 months)

**Now  
50%  
off**  
Offer extended

## E-COMMERCE SOLUTIONS



Set up your online store and start selling. Integration  
with eBay®, Shopzilla™, Google Product Search™  
and Shopping.com® included!

**Starting at** ~~\$24.99/month~~  
now **\$11.99/mo.\*** (first 6 months)

**Now  
50%  
off**  
Offer extended

Now accepting  
**PayPal™**



\*Offers valid for a limited time only. Setup fee, minimum contract term, and other terms and conditions may apply. Visit [www.1and1.com](http://www.1and1.com) for full promotional offer details. Program and pricing specifications, availability and prices subject to change without notice. 1&1 and the 1&1 logo are trademarks of 1&1 Internet AG, all other trademarks are the property of their respective owners. © 2009 1&1 Internet, Inc. All rights reserved.



**[www.1and1.com](http://www.1and1.com)**





# The Network Goes Above And Beyond. Just Like You.

EXCEED YOUR CLIENTS' EXPECTATIONS WITH SMART AND SIMPLE SOLUTIONS ON AMERICA'S MOST RELIABLE WIRELESS NETWORK.

- Access email, send files and stay in touch with colleagues and clients locally and globally.
- Increase productivity with Customer Relationship Management (CRM) tools.
- Stay a step ahead of your calendar with our scheduling software.



BlackBerry® 8830

BlackBerry® Curve™ 8330



Call 1.800.VZW.4BIZ

Click [verizonwireless.com/business](http://verizonwireless.com/business)

Visit a Verizon Wireless store

See [verizonwireless.com/bestnetwork](http://verizonwireless.com/bestnetwork) for details. ©2009 Verizon Wireless.



# NETWORKWORLD

## NETWORK INFRASTRUCTURE

**12** Buzz over vSphere can't quell vendor lock-in concerns.

**14 Opinion Scott Bradner:** The FBI as ethical hacker?

**18** Burning security questions.

**34** Broadcom bids to buy Emulex.

**34** HP Blade System Matrix takes aim at Cisco.

**38 Opinion BackSpin:** Security: the ugly business.

## APPLICATION SERVICES

**12** .Net Services: Microsoft's key future.

**38 Opinion 'Net Buzz:** Politicians need their own slice of the 'Net.

## TECH UPDATE

**22** Getting a grip on key rotation.

**24 Mark Gibbs:** Analyzing Twitter with Excel, Part 4.

**24 Keith Shaw:** More iPhone juice, less bulk.



## COOLTOOLS

■ **The Juice Pack Air** gives extra battery life to the iPhone 3G while its hard case provides extra protection. See Cool Tools, page 24.

## NETWORKWORLD.COM

**8** Catch up on the latest online stories, blogs, newsletters and video.

■ **CONTACT** Network World, 492 Old Connecticut Path, Framingham, MA 01701-9002; Phone: (508) 766-5301; E-mail: [nwnews@nww.com](mailto:nwnews@nww.com); ■ **REPRINTS:** (717) 399-1900; ■ **SUBSCRIPTIONS:** Phone 877-701-2228; E-mail: [nww@omeda.com](mailto:nww@omeda.com); URL: [www.subscribe-nww.com](http://www.subscribe-nww.com)

## GOODBADUGLY

**Time to bargain with Microsoft**  
Corporations armed with a savvy knowledge of Microsoft's volume licensing program may be in the best position in a long time to negotiate the cost of software, according to one analyst.

"Resellers are saying there has never been a better time to negotiate with Microsoft," says Paul DeGroot, an analyst with independent analyst firm Directions on Microsoft. "It is a buyer's market, and it is a time when customers have had unusual bargaining power with Microsoft." DeGroot also says that the upcoming ship dates announced by Microsoft for both Windows 7 and Office 2010 make it a tactical time to explore different volume licensing options that could help reduce costs over time.

### Mozilla's patchwork

Mozilla last week patched 12 security vulnerabilities in Firefox 3, just days before it was to roll out the newest beta of its next open-source browser, Firefox 3.5. Of the dozen flaws fixed in Firefox 3.0.9, four were rated "critical," two "high," two "moderate" and four "low" in Mozilla's four-step ranking system. It was the most vulnerabilities Mozilla has patched since December 2008, when it quashed 13 bugs. The four critical vulnerabilities — two in the Firefox browser engine, two in its JavaScript engine — were patched by a single multi-fix update that Mozilla, as is its practice, said might be exploitable.



### Tough Earth Day for EarthLink customers

ISP EarthLink was hit with a major outage last Wednesday, with EarthLink users unable to access their e-mail or any Web pages hosted by the company for hours. EarthLink says the crash occurred due to a power outage at its facility in Pasadena, Calif. Power was restored mid-afternoon and the company then went to work trying to get customers back online.



## SECURITY TRAINING 101

How to create an effective end-user security awareness program. **Page 30**



TODAY, USERS ARE MORE AWARE OF EXISTING THREATS, BUT THREATS ARE MORE SOPHISTICATED AND THEY MIGRATE FASTER.

MAX REISSMUELLER, senior manager of IT infrastructure and operations, Pioneer Electronics in Long Beach, Calif.



---

# IT SERVICES

## VISIBILITY: 100%

## EFFICIENCY: UP 43%

## PAYBACK: 9 MONTHS

## VALUE: 100% CLEAR

---



CA Spectrum® solutions help you pinpoint and solve information flow problems across the IT infrastructure — networks, physical and virtual systems, databases and applications — before they impact your end users. Eliminate costly, labor-intensive oversight and deliver seamless service with payback in under a year. That's the power of lean.

Read the IDC white paper on CA software and ROI at [ca.com/spectrum](http://ca.com/spectrum).

**ca** Software



## Bias or tongue in cheek?

Re: Workplace surfing hounds have a new hero ([www.nwdocfinder.com/9732](http://www.nwdocfinder.com/9732)):

In this issue, Paul McNamara makes a case for trusting Snopes.com as a fact-checking site. He then undermines his entire argument with this snide remark: "Of course, the reason Snopes.com is more often accused of bias by conservatives than by liberals is that facts have a notoriously liberal bias."

Unless he was just trying to be funny, Mr. McNamara just displayed his own liberal bias for all to see. Facts are just facts, either true or false — they have no "bias". Bias is displayed by the selective use of only those facts that support your foregone conclusion.

*Alf*

## Apple missed the boat on netbooks

Re: Apple dismisses netbook trend ([www.nwdocfinder.com/9734](http://www.nwdocfinder.com/9734)):

Had Apple thought of it first, it would have been the greatest thing since the Apple IIe. Netbooks definitely have a place and it is apparent that Apple does not feel it necessary at this time. I have always felt that Apple has been an innovator but their "arrogance and pride" often gets the best of them.

*Anon*

## Cheated by Cisco braindumps

Re: Cisco speaks out against exam cheating ([www.nwdocfinder.com/9736](http://www.nwdocfinder.com/9736)):

I recently failed my recent for my CCNP, so after eight years I am no longer Cisco certified. Sadly I can't see me bothering to gain CCNP again as the braindumps have devalued the qualification so much. Cisco does not appear to be doing enough to challenge it as too many questions were repeated on my second attempt at the exam making it easy for the cheaters. A large enough pool of questions would soon reduce the ability to cheat. Now I am the one who feels cheated.

*Anon*

## There needs to be a balance between old and new in IT

Re: Why the basically good choice of Aneesh Chopra for U.S. CTO scares the bejeesus out of me ([www.nwdocfinder.com/9733](http://www.nwdocfinder.com/9733)):

One of the main problems that IT faces is its focus on the new and shiny, sometimes to the exclusion of the older, but more worthy. I'm by no means a technology Luddite, progress is to be desired, but there has to be some reason for it; something beyond just being neat.

This is a double-headed monster in my opinion. First IT types like me are often drawn to the new and sexy — maybe that's why we got into the business in the first place. Second, the flashy — particularly when it makes it to general business publications — can generate a "me too" attitude in senior executives, sometimes deflecting IT attention from less glamorous, but more necessary work.

As with most things in life, a balance between both elements of IT is probably what is most necessary.

*Peter Thomas*

## Windows susceptible to 'Linux exploit'

Re: Intel CPU cache poisoning: dangerously easy on Linux ([www.nwdocfinder.com/9735](http://www.nwdocfinder.com/9735)):

This exploit has been known for a while now and is actually easier on Windows since most of the Windows boxes in the wild are already exploited in other ways. This is one of the few ways currently available to access a Linux box. Keep in mind that this is a CPU flaw and not a Linux flaw. Being an open OS Linux is easier to utilize for such an exploit, but that also means that Linux can lock it down easier as well.

*Anon*

*E-mail letters to [jdix@nww.com](mailto:jdix@nww.com) or send them to John Dix, editor in chief, Network World, 492 Old Connecticut Path, Framingham, MA 01701-9002. Please include phone number and address for verification*

# NETWORKWORLD

CEO: MIKE FRIEDENBERG

EXECUTIVE VICE PRESIDENT/GENERAL MANAGER: JOHN GALLANT

EDITOR IN CHIEF: JOHN DIX

## NEWS

ONLINE EXECUTIVE EDITOR, NEWS: BOB BROWN

ONLINE NEWS EDITOR: MICHAEL COONEY

ONLINE NEWS EDITOR: PAUL MCNAMARA

ONLINE ASSOCIATE NEWS EDITOR: ANN BEDNARZ (612) 926-0470

## NET INFRASTRUCTURE

SENIOR EDITOR: JOHN COX (978) 834-0554

SENIOR EDITOR: TIM GREENE

SENIOR EDITOR: ELLEN MESSMER (941) 792-1061

MANAGING EDITOR: JIM DUFFY (716) 655-0103

## ENTERPRISE COMPUTING

SENIOR EDITOR: JOHN FONTANA (303) 377-9057

SENIOR WRITER: JON BRODKIN

## APPLICATION SERVICES

NATIONAL CORRESPONDENT: CAROLYN DUFFY MARSAN, (317) 566-0845

SENIOR EDITOR: DENISE DUBIE

SENIOR EDITOR: CARA GARRETSON (240) 246-0098

## SERVICE PROVIDERS

SENIOR WRITER: BRAD REED

## COPY DESK/LAYOUT

MANAGING EDITOR: RYAN FRANCIS

COPY CHIEF: TAMMY O'KEEFE

## ART

EXECUTIVE ART DIRECTOR: MARY LESTER

ASSOCIATE ART DIRECTOR: STEPHEN SAUER

## FEATURES/NEW DATA CENTER SUPPLEMENTS

EXECUTIVE FEATURES EDITOR: NEAL WEINBERG

## CLEAR CHOICE TESTS

EXECUTIVE EDITOR, TESTING: CHRISTINE BURNS, (717) 243-3686

LAB ALLIANCE PARTNERS: JOEL SNYDER, Opus One; JOHN BASS, Centennial Networking Labs; BARRY NANCE, independent consultant; THOMAS POWELL, PINT; Miercom; THOMAS HENDERSON, ExtremeLabs; TRAVIS BERKLEY, University of Kansas; DAVID NEWMAN, Network Test; JAMES GASKIN, Gaskin Computing Services; CRAIG MATHIAS, FarPoint Group  
CONTRIBUTING EDITORS: DANIEL BRIERE, MARK GIBBS, JAMES KOBIELUS, MARK MILLER

## NETWORKWORLD.COM

SITE EDITOR: JEFF CARUSO, (631) 584-5829

SITE PRODUCER: JONATHAN SUMMEY

COMMUNITY EDITOR: JULIE BORT (970) 482-6454

PROGRAM DIRECTOR: KEITH SHAW, (508) 766-5444

MULTIMEDIA EDITOR: JASON MESERVE

ASSOCIATE ONLINE EDITOR: SHERYL HODGE

DIRECTOR OF USER EXPERIENCE & INFORMATION ARCHITECTURE: VALESKA O'LEARY

CREATIVE LEAD: ZACH SULLIVAN

EDITORIAL OPERATIONS MANAGER: CHERYL CRIVELLO

OFFICE MANAGER, EDITORIAL: PAT JOSEFEK

MAIN PHONE: (508) 766-5301

E-MAIL: [first\\_name\\_last\\_name@nww.com](mailto:first_name_last_name@nww.com)

## One-day IT event coming to a city near you!

● 10-IT Tracks; Vendor Expo; Peer case-studies

● Feature sessions include: Security; WAN services; Network management; Virtualization; Data centers; SaaS; Green IT; UC; VoIP; Mobility; Application delivery

● 10 cities in 2009

● ITR visits Chicago, Boston and Atlanta in 2009

Register and qualify to attend free

[www.nwdocfinder.com/9433](http://www.nwdocfinder.com/9433)



## Get the e-dition

Network World can be delivered right to your desktop, view it at:

[www.nwdocfinder.com/8734](http://www.nwdocfinder.com/8734)



## BLOGOSPHERE

■ **Why the Oracle/Sun deal is bad news for Microsoft and SQL Server.** On the Microsoft Subnet the news that Oracle would buy Sun for \$7.4 billion was a stunner — and one that will be especially hard to figure out for the Microsoft world. One of the first questions that arises is what will become of mySQL, owned by Sun? Oracle has a history of buying competitors and forcing customers of said competitors over to its higher-priced options. If Oracle deploys the "forced move" strategy, it could have Microsoft smiling, as this leaves the more affordable SQL Server as the most logical option for mySQL users that don't want to move to some sort of Oracle database. Oracle's purchase of Sun also gives it the hardware to quickly push into cloud computing in competition with Microsoft, IBM and others.

[www.nwdocfinder.com/9737](http://www.nwdocfinder.com/9737)

■ **Apple reports blockbuster earnings.** IonApple blogger Yoni Heisler reported Apple's announcement last week of its earnings for its most recent quarter, and reported earnings of \$1.33 a share on revenue of \$8.16 billion. Put another way, that's \$1.21 billion in profits. In accordance with expectations, Apple reported 2.2 million Mac sales, which represents a 3% decline from the same quarter a year ago. iPhone and iPod sales figures were slightly higher than expected, with 11.01 million iPods and 3.79 million iPhones sold. Apple's earnings report should be a welcome surprise for investors, who have recently become bearish on the stock in light of surrounding economic conditions.

[www.nwdocfinder.com/9738](http://www.nwdocfinder.com/9738)

■ **Wave goodbye to Palm?** John Cox blogs that Palm is one of the 12 brands doomed to distinction over the next 12 months, as predicted by Douglas McIntyre, one of the editors at 24/7 WallSt., a Web site that offers analysis and commentary for equity investors. The upcoming Palm Pre smartphone, exclusively on Sprint's network, is the "one last chance to become viable" but the odds are all against it, according to the analysis. "Palm won't be in business in a year," McIntyre writes. The analysis leaves open what might be the final form of Palm's demise (and that of the other 11 brands): shutdown, bankruptcy, or being acquired or merged. McIntyre posted his story last week, offering 12 more well-known brands that will follow in the wake of last year's extinction of Circuit City, Aloha Airlines and Gateway Computer (acquired by Acer).

[www.nwdocfinder.com/9739](http://www.nwdocfinder.com/9739)

INTERVIEWS, THE COOLEST TOOLS AND MORE

ITvVIDEO

IDG NEWS WIRE:



### VMWare launched vSphere

VMware says vSphere is the first virtualization system that can handle any class of enterprise workload. It's the fourth generation of the company's virtualization platform, but CEO Paul Maritz called this one a breakthrough.

[www.nwdocfinder.com/9727](http://www.nwdocfinder.com/9727)

IDG NEWS WIRE:



### Honda demos motion-assistance devices

A team of engineers from Honda's research division showed off a piece of the future in New York last week, unveiling for the first time outside of Japan two motion-assistance devices.

[www.nwdocfinder.com/9728](http://www.nwdocfinder.com/9728)

IDG NEWS WIRE:



### Notebook replaces trackpad with LCD panel

Sharp will sell a notebook in late May that includes an embedded optical sensor instead of a traditional trackpad.

[www.nwdocfinder.com/9729](http://www.nwdocfinder.com/9729)

## BEST OF NWW'S NEWSLETTERS

# 10 keys for making social networking work

**Web applications:** One of the big challenges when you put any kind of content or service online is getting people to actually take a look — 'page views' are the 'eyeballs' of Web 2.0. Online advertising is, of course, one way to generate traffic but there's a hefty price tag to get a big impact and initially you're going to be rolling the dice with exactly which channels to use, what kind of ads to deploy, and how much to spend. But while you're burning cash on conventional Internet advertising you should also be using social networking to spread the word. Now I know what you're going to say — "Isn't social networking just the new black?" The answer my friend is yes, but it's a new black that is going to be around for a long time so capitalize upon the new channel while its fresh and relatively accessible.

[www.nwdocfinder.com/9723](http://www.nwdocfinder.com/9723)

**Tech exec:** At the recent Web 2.0 Expo, PayPal's senior director of global risk management, Katherine Hutchison, warned that

online fraud is on the rise. There are many factors behind this rise, not the least of which is the rapid growth of the underground cybercrime economy. Criminals have established vast botnets comprised of millions of computers that are unknowingly controlled by malicious masters. In 2008, the Georgia Tech Information Security Center estimated as many as 15% of online computers were part of a botnet — up from 10% in 2007 — and it's likely to get worse. For example, there's evidence that the recent Conficker virus is out to create an even greater population of bot computers. With so many bot devices now in place, criminals are able to easily hide both their locations and their identities to commit their assaults. As a result, the online fraud problem is growing bigger and wider. It exists wherever someone creates a new account, logs into an account, or makes a card not present credit purchase. Here are just a few examples of places where fraudsters are doing their dirty work. [www.nwdocfinder.com/9724](http://www.nwdocfinder.com/9724)



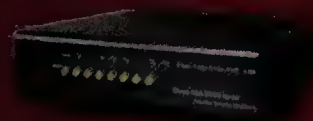
## SECURITY NOTICE



RESTRICTED  
AREA  
KEEP OUT

PRIVATE  
PROPERTY  
NO TRESPASSING

There are a number of ways to protect your network.  
The first should be to give CDW a call.

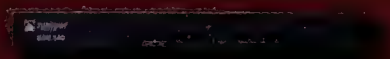


### Cisco® ASA 5505 Adaptive Security Appliance

- Secures your network against attacks such as worms, viruses, spyware, keyloggers, Trojan horses, rootkits and hackers
- Delivers secure remote access to authenticated users on both managed and unmanaged endpoints
- Combines feature-rich VPN connectivity with comprehensive threat defense to deliver cost-effective remote network access
- Prevents unauthorized access to applications or information assets by providing businesses with fine-grain identity- or network-based access control



**\$414<sup>99</sup>**  
CDW 1065037

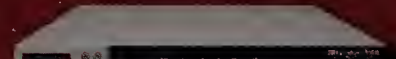


### Juniper® Networks Secure Services Gateway 140

- Purpose-built security appliances
- Delivers a powerful blend of performance, security and LAN/WAN connectivity for medium to large regional and branch office deployments
- Offers a rich set of Unified Threat Management security features, including stateful firewall, IPSec VPN, IPS, antivirus, antispam and Web filtering
- Extensible I/O architecture delivers flexible LAN/WAN connectivity options on top of security to reduce costs and extend investment protection



**\$3200**  
CDW 1065105



### Check Point UTM-1 Total Security 570 security appliance

- Includes everything you need to secure your network for up to 3 years
- Provides protection for networks, systems, and users against multiple types of threats
- Offers streamlined security deployment and administration
- Provides protection against emerging threats with SmartDefense Services

#### Call CDW for pricing

Check Point UTM-1 Three Year Total Security Model 570 - up to 250 users CDW 1479293



### We're there with the security solutions you need.

Security threats won't get on your network if they can't get to the network. That's why gateway security is so important. CDW has a wide selection of top-name firewall protection, antivirus, antispymware, intrusion prevention and more. Our personal account managers along with our highly trained technology specialists have the expertise you need to ensure your network is fortified and secure. So call CDW today. And eliminate threats before they even become threats.

CDW.com | 800.399.4CDW



The Right Technology. Right Away.



# Microsoft posts historic revenue stumble

**F**or the first time in its 23-year history as a public company, Microsoft's revenue dropped in a year-over-year comparison. The company reported revenue of \$13.65 billion for its fiscal third quarter, representing a 6% decline compared with the same quarter a year ago. Net income for the quarter ended March 31 came in at \$2.9 billion — a 32% decline compared with last year. The news was bleak across all of Microsoft's business units, with drops in every segment except servers and tools, which has been Microsoft's most consistent performing business segment for the past two years. Still, Microsoft CFO Chris Liddell said the overall outlook is solid. "Over the next 18 months we'll bring a new wave of products to market. In the short term results will be impacted by current economic conditions, but the overall outlook is strong," he said. "We believe the recovery will be slow and gradual." [www.nwdocfinder.com/9741](http://www.nwdocfinder.com/9741)

**Funding for network companies plummets.** Venture capital investments in network companies have dropped below \$1 billion in a quarter for the first time since 1996. Even in the years immediately following the dot-com bust, quarterly investments in U.S. networking vendors never fell below \$2 billion. But in the first three months of 2009, investors gave only \$935 million to companies in this category, according to data provided by Pricewaterhouse Coopers and the National Venture Capital Association, authors of the quarterly MoneyTree Report. The network funding totals reflect a nationwide drop in venture capital investments. In all industries, venture capitalists gave \$3 billion to 549 companies during the first quarter, down from \$5.7 billion spread over 866 deals in the last quarter of 2008. "The numbers look pretty grim for [the networking] sector," says Tracy Lefteroff, a global managing partner at PwC. [www.nwdocfinder.com/9742](http://www.nwdocfinder.com/9742)

**Tech groups praise Obama pick for CTO.** Tech vendors and trade groups have praised President Obama's appointment of Virginia's secretary of technology as the U.S. government's CTO, saying that Aneesh Chopra has strong experience using technology to make government more responsive to citizens. Obama, announcing the appointment during his weekly address on April 18, said Chopra will "promote technological innovation to help achieve our most urgent priorities — from creating jobs and reducing healthcare costs to keeping our nation secure." Obama made a "stellar choice,"



said Vinod Khosla, founder of Khosla Ventures. "This man is a 'do-er,' plain and simple. He is a visionary leader and executive who can bring people together around a vision to get the job done." Executives at Google, Intel, Sun, the Center for Democracy and Technology, the Consumer Electronics Association, TechAmerica and the Business Software Alliance also praised the Chopra appointment. [www.nwdocfinder.com/9743](http://www.nwdocfinder.com/9743)

**Some IT skills see pay hikes during downturn.** Budget dollars may be tight, but that doesn't mean IT departments aren't willing to pay for key technology skills, talent and certifications. Research released by Foote Partners shows that pay for 60 skills and certifications declined in the first quarter, yet another 46 skills and certifications experience increases in pay during the same time period. In the noncertified camp, pay for Linux skills rose by more than 28%, while Apache and Sybase skills saw 25% increases in pay. Pay for Java and HTTP skills increased by 20%. Certified IT skills that saw pay increases include HP/Certified Systems Engineer (up 14.3%) and Sun Certified Programmer for Java Platform (up 13.5%). "There's a lot of hiring and reshuffling of talent right now," said CEO David Foote. "Companies have serious labor requirements and many are aggressively stepping up, using compensations wisely to meet the demand for specific skills." [www.nwdocfinder.com/9744](http://www.nwdocfinder.com/9744)

**AMD plans 16-core server chip.** Advanced Micro Devices is designing a server chip with as many as 16 cores, quadrupling the count of its current quad-core server chips. Code-named Interlagos, the chip will have 12 to 16 cores, and will be released in 2011. Interlagos will be a follow-up offering to the 12-core chip code-named Magny-Cours that AMD plans to release in the first quarter

of 2010. The 16-core chips — which are part of AMD's Opteron 6000 series — could go into servers with two to four sockets, which could mean a maximum of 64 cores per server. AMD's Opteron chips compete with Intel's Xeon server chips, but Intel has only announced an eight-core version of its Xeon chips with a chip code-named Nehalem-EX, due for release in 2010.

[www.nwdocfinder.com/9745](http://www.nwdocfinder.com/9745)

**Wireless sensors tracks energy use.** Arch Rock has created a special version of its wireless sensor networking product line to monitor energy use and identify changes to make it more efficient and to save money. Energy Optimizer combines Arch Rock's existing PhyNet IP-based sensor nodes, wireless routers and server appliance with a new electric power sensor and a data analysis and reporting application. The sensor measures electric use on a fine-grained level, by individual circuit. It can show what systems are using what amount of electricity. This data is exported to analysis and reporting software that correlates the data with budgeted spending, demand trends and other criteria. Users can see energy use by department or over a given time period, for example. "We introduce all this without affecting or changing any existing HVAC, lighting or other systems," says Roland Acra, CEO for Arch Rock. [www.nwdocfinder.com/9746](http://www.nwdocfinder.com/9746)

**AT&T reports surge in Wi-Fi connections.** AT&T says users connected to its Wi-Fi hot spots 10.5 million times in the first quarter of 2009, more than triple the volume in the first quarter of 2008. AT&T attributes the large increase to two factors: the proliferation of Wi-Fi capable devices and the expansion of the company's Wi-Fi footprint. On the device side of things, AT&T has expanded its roster of popular Wi-Fi enabled smartphones, such as the iPhone 3G and the BlackBerry Bold, which accounted for more than 4 million connections to the company's hot spots. In terms of Wi-Fi hot spots, AT&T's 2008 Wayport acquisition and Starbucks deal helped the company expand its Wi-Fi footprint to roughly 20,000 locations in the United States and more than 80,000 locations around the world. [www.nwdocfinder.com/9747](http://www.nwdocfinder.com/9747)

**Canonical optimizes Linux distribution for netbooks.** Canonical has released a Linux distribution optimized for netbooks. The Ubuntu Linux 9.04 Netbook Remix is designed to run basic Web and office applications typically used on netbooks. The operating system boots faster than other Ubuntu distributions and has better power-management features to boost battery life, Canonical said. It also centralizes applications and bookmarks under one interface to rapidly access programs and Web sites. [www.nwdocfinder.com/9748](http://www.nwdocfinder.com/9748)



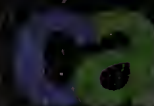
---

YOU DON'T  
**NEED MORE**  
SECURITY.  
YOU NEED  
**BETTER**  
SECURITY.

---

CA Security Management software streamlines your IT security environment so your business can be more secure, agile and compliant without upsizing your infrastructure. All with faster time to value. Greater efficiency starts with more efficient IT. It takes the power of lean.

Learn more at [ca.com/security](http://ca.com/security)



Software



# Buzz over vSphere can't quell vendor lock-in issue

BY JON BRODKIN

VMware's highly anticipated vSphere software appears robust enough to maintain the vendor's technology edge over its competition, but there are still lingering questions about vendor lock-in when it comes to the VMware virtualization platform.

VMware last week introduced vSphere, calling it a "cloud operating system" because of its ability to aggregate the virtual resources in the data center into one centrally managed computing pool, or private cloud.

In pushing the private cloud, VMware is hoping IT shops will build highly virtualized, fault-tolerant, self-service data centers that resemble those of cloud providers such as Amazon and Google, but which exist solely within the firewall for the benefit of an enterprise's own users. VMware says it will eventually release an upgrade letting IT shops connect their private clouds to cloud services offered commercially by Terremark, Savvis and SunGard.

vSphere is a major move for VMware and one that was necessary to keep the virtualization market leader ahead of competitors Microsoft and Citrix, analysts say.

"VMware has Microsoft, Citrix and in a very niche way Parallels over in the Mac market nipping at their heels," says Laura DiDio, an analyst with Information Technology Intelligence. "There's been a lot of buzz about [Microsoft's] Hyper-V. Citrix has done a lot of price cutting. VMware needs to say 'OK, I see your initiative and I raise it.'"

vSphere is the follow-up to VMware Infrastructure 3, the name given to VMware's core hypervisor and related management tools. vSphere will be available later in the second quarter.

While VMware is promising new levels of flexibility in the data center with vSphere, the company still promotes vendor lock-in by refusing to support competing virtualization products, industry watchers say.

Microsoft's System Center Virtual Machine Manager is capable of managing virtual machines (VM) created both with Microsoft's Hyper-V platform and VMware's ESX hypervisor. Despite the presence of Hyper-V and Citrix's XenServer, and the fact that many data centers use multiple virtualization products, VMware has consistently claimed that there is no market pressure for them to support competing hypervisors.

"We're taking the stance that, if and when

See VMware, page 14

## Q&A .Net Services: Microsoft's future



*On April 1 Microsoft released the Community Technology Preview beta of .Net Services, which are a set of Microsoft-hosted developer tools for creating cloud-based and/or cloud-aware applications. Microsoft asserts that its cloud operating system, Azure, will be fully open and able to support any application built on any platform, via these tools. Burley Kawasaki, director of developer platform product management, sat down with Editor Julie Bort to discuss .Net Services. For the full transcript of the interview, see [www.nwdocfinder.com/9726](http://www.nwdocfinder.com/9726).*

### Microsoft has been promoting four major cloud initiatives: Windows Azure, SQL Services, .Net Services and Live Services. What's the difference?

All four are part of an effort to deliver the Azure Services Platform. Windows Azure is the 'cloud operating system', it provides the low-level resources like compute, storage. On top of the cloud operating system we also deliver building-block services oriented at developers building apps — they can use these additional services either in a stand-alone fashion or in conjunction with Windows Azure. SQL Services provides cloud-based relational storage; Live Services provides cloud-based consumer services. .Net Services is a set of hosted services that extend the .Net programming model to take advantage of some of the unique types of app scenarios that you can build targeting the cloud.

### What features does .Net Services offer?

Most customers will start by taking their existing .Net apps and looking for extension opportunities. We've added the "service bus" (for secure messaging across firewall from on-prem to the cloud); "access control" (to easily federate identity info across identity mechanisms); and "workflow" (to provide rules that help you route the messages as they flow across the service bus). As part of the service bus, we provide access control capabilities that recognize also that you want to secure your messages as they cross firewall boundaries (between on- and off-prem), and also the ability to provide workflow that controls the flow of messages.

### How does .Net Services access control fit with the Geneva cloud identity platform?

Geneva is the codename for a set of the technologies we're releasing in the future, across both server (Geneva server) and framework (Geneva framework). We're complementary to those investments by also providing the cloud component of this, completing the triangle. You as a developer can easily build "claims-aware" apps (using Geneva fx), easily connect/federate identity with your existing on-prem applications (using Geneva server), and if you want to connect over into the cloud (or across clouds) then .Net Services provides the cloud-based identity federation component. We built .Net Services working very closely with the Geneva team, to apply the same claims-based identity model deeply across the technologies so that they work together very well.

### What's up with Oslo and has it materialized yet with .Net Services CTP?

We just released another update to the [Oslo] CTP in January. Oslo is part of .Net development. We see Oslo as providing a broad platform for building all types of apps, and helping give you greater productivity by applying metadata and model-driven techniques. It turns out that one of the sweet spots of model-driven type development happens to be for the cloud to really take advantage of the elasticity and scale that you can provide in the cloud, we use lots and lots of model-driven techniques under the covers in Azure. So it's only natural that we would apply our Oslo platform investments at some point to highlight the different types of cloud app scenarios that customers want to build. This is something we'll be talking more and more about throughout the year. ■



# Everything you need to sit on top of the mission-critical food chain.

Introducing the highly-evolved SUSE® Linux Enterprise 11. Today it's even more reliable, delivering high availability clustering with the affordability of open source. It's more interoperable, bridging your mixed Linux and Windows environments with support from both Novell® and Microsoft®. And it's more adaptable, powering your physical and virtual machines—from desktop to data center. All so you can lower your infrastructure costs, make your people more productive, and turn your organization's potential into reality. See how the evolution of Linux can make IT work as one for you.

[novell.com/evolution](http://novell.com/evolution)

**Novell®**  
Making IT Work As One™





## VMware

continued from page 12

there is a critical mass for something to be supported, we will support it," says Bogomil Balkansky, VMware's vice president of product marketing.

DiDio calls the issue a "tricky tap dance that all the vendors are playing. They don't, in any way, shape or form, want to support other people's platforms. However, given that it's a buyer's market they can't appear to be too recalcitrant, because the customers will push back and say 'hey, you don't care about us.'"

### VMware scales up

Balkansky says the goal of the cloud operating system is to turn IT into a pay-as-you-go service that is always available through a Web portal. VSphere aggregates all the virtualized x86 components of the data center and gives the IT administrator greater control over service levels, he says.

VSphere will let customers create a single computing pool consisting of as many as 32 physical servers and 2,048 processing cores, 1,280 VMs, 32TB of RAM, 16 petabytes of storage and 8,000 network ports, according to VMware.

Compared with VMware Infrastructure 3, vSphere will double the processors available to VMs, more than double the network interface cards available to VMs, quadruple memory,

triple network throughput, and double maximum I/O operations per second to more than 200,000.

Thin provisioning technology will cut storage needs in half, and other improvements will let customers consolidate onto fewer physical servers and save on power and cooling. A Distributed Power Management system will use VMotion live migration to automatically place VMs on as few servers as possible while powering down physical boxes that aren't needed. Live migration of VMs and storage has been enhanced to make it easier, DiDio says.

New fault tolerance capabilities will guarantee failover with zero data loss and zero downtime in the case of hardware failure, Balkansky says. This is an improvement over today's VMware high-availability software, in which failing over requires about a two-minute service interruption, he says.

Pund-IT analyst Charles King says VSphere, coupled with a new EMC Symmetrix storage system designed for virtual data centers, is a step forward in cloud computing technology.

"Frankly, the cloud is something that cannot exist without virtualization," King says. With EMC's new system highlighting the importance of mapping virtual servers to the supporting storage environment, "that's a place where the two companies working together can provide a very interesting and very powerful value proposition," he says.

As with any new IT product, there are limitations in vSphere. The ability to federate the internal data center with those of cloud providers will not be available until later this year. This federation will let customers manage internal and external resources from the same pane of glass, but it will only work with the products of vendors who are using vSphere.

VMware's cloud partners include more than 500 service providers such as Terremark, Savvis, Telefonica, TSystems, SunGard and BlueLock. But the list does not include Amazon, one of the most popular vendors offering storage and compute services over the Internet cloud.

Microsoft has criticized VMware for making its products too expensive, an issue VMware addressed with vSphere by offering additional pricing options to lower the point of entry. Packages for small IT shops start at \$166 per processor. Last year, VMware made its basic hypervisor free, but still charges for the management tools that help data centers realize all the flexibility benefits of virtualization.

Adding lower pricing tiers is a smart move, DiDio says. "As server virtualization becomes more commoditized they had to do it, and not just because of Microsoft. Citrix has had price declines too. You have to battle market pressure, especially when there is more competition and you know the competition is gunning for you." ■

# The FBI as an ethical hacker?



**NET INSIDER**  
Scott Bradner

**M**ore details are emerging about how the FBI engages in hacking and the planting of spyware.

This story goes back to at least 2001 when Bob Sullivan of MSNBC and Ted Birdis of AP broke the story of Magic Lantern. At the time the FBI did not want to say much, but now there is real information that clears up some things and reinforces real concerns over this approach.

Law enforcement is faced with some very hard problems when it tries to find and get evidence on bad guys. There are a lot of tools that

you and I can use to make the Internet safer when doing business on the 'Net or to protect our privacy if we need to blow the whistle on someone or communicate with a support group. You should be using encryption on your own computer so that your personal or business records are not compromised if your computer is stolen. You can use anonymizing proxies or anonymizing networks if you are a dissident living in a repressive society or would like to visit a mental health support group. These are important tools when used by the good guys, but make life harder for law enforcement when used by the bad guys.

Though note that both of these technologies are far too important to give up just to make law enforcement's job easier.

Still, law enforcement needs to overcome tools of this type if they are to catch the people they are after. This is where Magic Lantern, and its less prosaically named successor, "Computer & Internet Protocol Address Verifier" (CIPAV), come in. These systems are officially sanctioned spyware, theoretically only used when permitted by the courts (in the United States at least).

Wired.com was able to get a bunch of documents on CIPAV under

the Freedom of Information Act that help to explain it. After being surreptitiously installed on your computer by exploiting some software bug, CIPAV sends the FBI information about your computer then starts monitoring computer activity (software like this is used by bad guys to steal your bank account passwords). In this case, the FBI can use it to find your encryption keys. Also, because your computer sends its actual location and other information directly to an FBI computer, using an anonymizing proxy will not hide you. (But something like Little Snitch may let you know that something funny is going on.)

CIPAV is a useful tool for law enforcement and, assuming it is properly applied, good for society. But, even making the assumption that CIPAV will always be properly applied, there are real problems with it.

The FBI depends on exploiting software bugs to install CIPAV. I would like my software vendors to fix bugs that would let in spyware even if it makes life hard for the FBI. I hope that the software vendors are not leaving bugs unfixed or purposeful back doors just to help the FBI, because sooner or later the bad guys will find them and exploit them.

Also I'd like my antispyware software to find and report on all spyware, but there have been reports that some antispyware companies have agreed to ignore the FBI tool. This provides a great opportunity for spyware developers to create software that looks enough like the FBI program so that the antispyware software will ignore it as well.

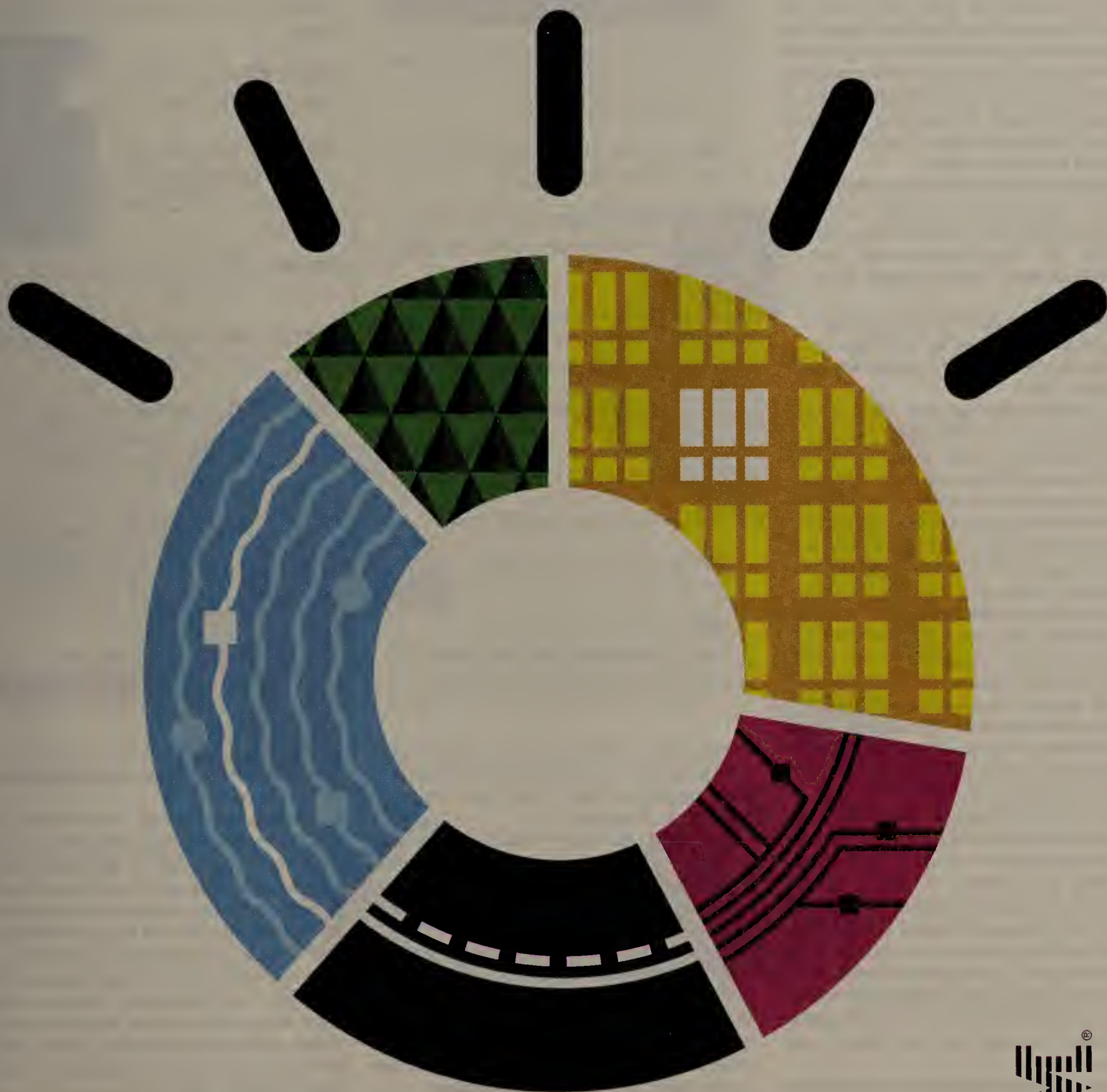
I do not know what the right answer is to law enforcement's problems, but I would like it not to facilitate bad guys taking over machines all over the world.

Disclaimer: Facilitating bad guys is not an explicit Harvard goal, but one cannot control one's graduates. Harvard has not expressed an opinion on CIPAV that I know of, so the above review is mine.

*Bradner is Harvard University's technology security officer. He can be reached at sob@sobco.com.*



Up to 85% of computing  
capacity sits idle in  
distributed environments.  
A smarter planet needs  
smarter infrastructure.  
Let's build a smarter planet.  
**ibm.com/dynamic**



THINK





## Sun

continued from page 1

various applications at affordable prices, King says. "In the months following the bust, there was a huge amount of Sun product that was out on the street and it precluded the need for people to upgrade or purchase new equipment," he says.

Sun prized its Sparc architecture so much that it missed the industry-wide transition to x86 processors, analysts say. Sun actually did sell x86-based systems in the 1980s, but concentrated its efforts on Sparc for most of the 1990s. In King's view, Sun treated x86 systems as nice toys, but not platforms that could be used to power a serious corporate data center. Sun did increase its presence in the x86 market in the years following the dot-com bust with AMD- and Intel-based servers, but it seems to have been too little, too late.

The biggest reason for Sun's downfall is "the inability to recognize the x86 open architecture, as opposed to what they were selling with the Sparc processors," says Enterprise Strategy Group analyst Brian Babineau.

Babineau also faults Sun for pursuing a "non-capitalistic strategy" by emphasizing open source, yet failing to monetize key products such as Java.

King and Babineau point to failed acquisitions. King notes Sun's \$2 billion purchase of Cobalt Networks, a server appliance vendor that never produced any real dividends.

Sun has attempted to compete in many different hardware and software markets, but is too often in third or fourth place, Babineau says. Sun bought MySQL for \$1 billion in 2008, for example, challenging the database market where Oracle was already king. Sun also executed poorly in the storage market after purchasing the vendor StorageTek for \$4.1 billion in 2005, Babineau says.

"There was just mismanagement," he says. "They purchased so many different things over the years. It was panic and frantic at the end."

Following the dot-com crash, Sun's profits took an immediate dive. After reporting net income of \$1.85 billion in fiscal 2000, that number was halved to \$927 million in 2001. Sun lost \$628 million in fiscal 2002 and a whopping \$2.4 billion in fiscal 2003. It returned to profitability in fiscal 2007, but ultimately the company reported net losses in three of the four most recent quarters, and the sharks started circling. IBM offered \$7 billion to buy Sun, only to be rebuffed. Several analysts doubted that Sun could find another buyer after rejecting IBM, but then Oracle came calling.

One reason Sun couldn't go on in its present form is that the company had a core group of loyal customers but wasn't able to win many new accounts, King says. And for many years, when Sun's customers wanted a reliable x86 platform they had to turn to Sun's competitors.

"The history of the Valley is littered with the

## 27 years of Sun



**1982:** Sun is founded by Vinod Khosla, Bill Joy, Andy Bechtolsheim and Scott McNealy, and introduces its first Unix workstation product.

**1984:** John Gage, Sun's fifth employee, coined the phrase "The network is the computer."



**1985:** Sun designs first Sparc processors. Khosla leaves Sun to join a venture capital firm.

**1986:** Sun goes public with successful IPO, extends operations to Asia and Australia, having already set up shop in Europe.

**1987:** Sun and AT&T form alliance to develop Unix technology.

**1988:** Sun hits \$1 billion in revenue.

**1990:** Sun engineers begin working on Java.

**1991:** Sun debuts Solaris, a Unix-based operating system.

**1995:** Sun brings Java to market. In the same year, Bechtolsheim leaves Sun to found switching company Granite Systems, later acquired by Cisco.



**1997:** Sun's new 64-processor Enterprise 10000 servers boast the "processing power of four mainframes."

**September 2000:** Sun uses \$2 billion of stock to acquire Cobalt Networks, a maker of Linux-based server appliances. The deal was a failure, with Sun retiring the product line three years later.

**2003:** Sun begins developing AMD-based x86 servers.

**August 2005:** Sun purchases StorageTek for \$4.1 billion.

**April 2006:** Jonathan Schwartz takes over CEO role from Scott McNealy, who remains chairman of the company.

**November 2006:** Sun open sources the bulk of Java.

**February 2008:** Sun purchases MySQL open source database company for \$1 billion.

**October 2008:** Bechtolsheim, who had returned to Sun as chief architect, takes full-time role with Ethernet switching start-up Arista Networks but keeps an advisory role at Sun.

**November 2008:** Sun unveils Amber Road iSCSI storage appliances that combine standard hard drives with flash memory.

**April 20, 2009:** Oracle announces agreement to purchase Sun for \$7.4 billion.

**ORACLE**

dried husks of companies that had great technology but didn't understand the dynamics of the commercial market they were trying to compete in," King says.

That's not to say Oracle won't be able to gain success with Sun's technology. While Sun has failed to maintain profitability, the company did pull in more than \$3 billion in revenue in the most recent quarter.

Oracle is touting Java and Solaris as two key software assets that will help Oracle and Sun turn a larger profit than they could separately. Oracle, which is expected to significantly reduce Sun's expenses, predicted that Sun will bring \$1.5 billion in operating profit in its first year as part of the combined company.

"Java is one of the computer industry's best-known brands and most widely deployed technologies, and it is the most important software Oracle has ever acquired," Oracle said. "The Sun Solaris operating system is the leading platform for the Oracle database. With the acquisi-

tion of Sun, Oracle can optimize the Oracle database for some of the unique, high-end features of Solaris."

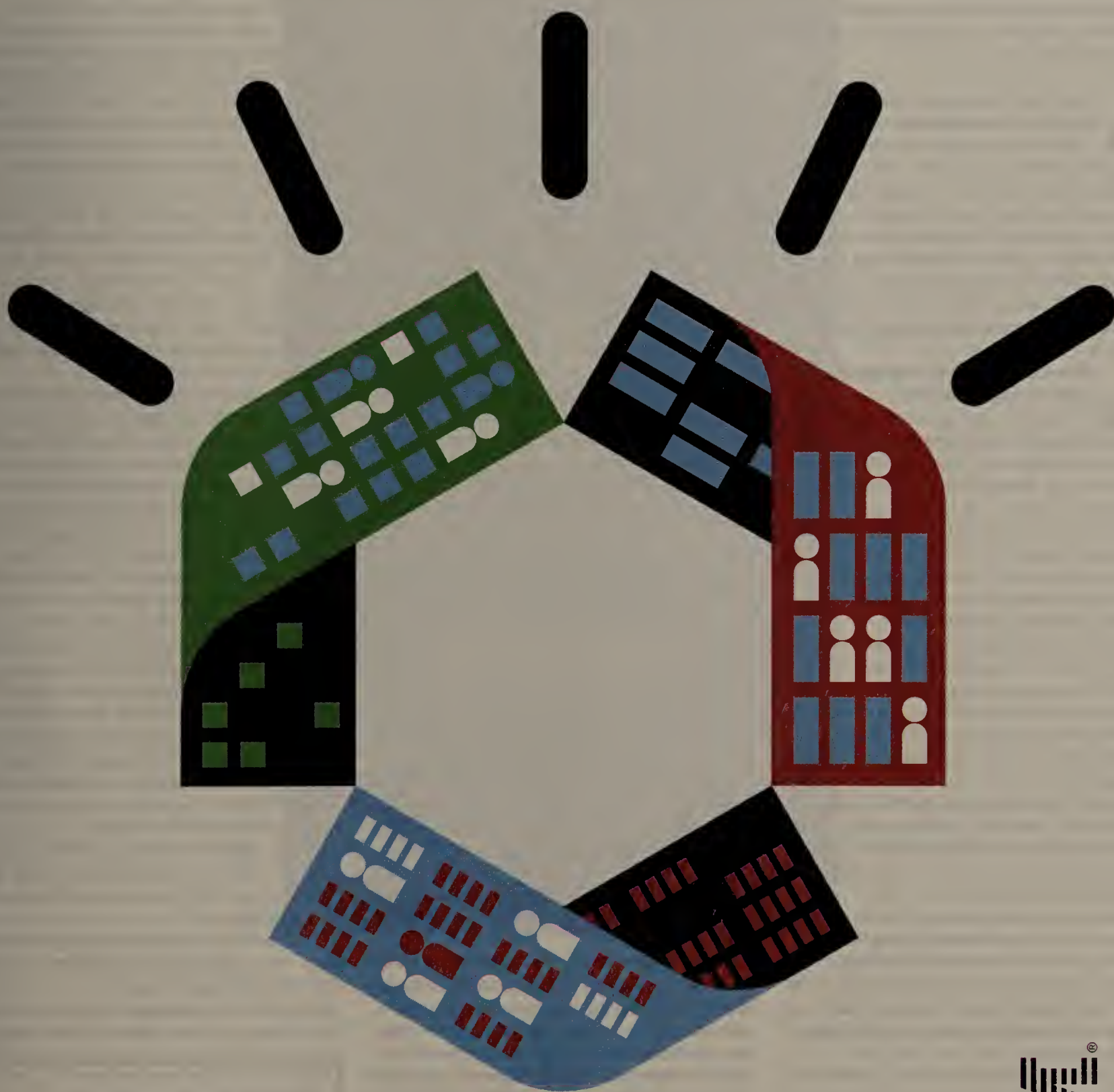
With Oracle seemingly most excited about Sun's software platforms, Babineau speculates that Oracle might sell off the hardware business. Other analysts say Oracle should leverage its new hardware capabilities with data warehousing appliances that integrate MySQL and other Oracle databases into Sun servers.

On the whole, Oracle's announcement of the purchase was "remarkably devoid of detail," King says, so it's tough to say what the combined company will look like. Oracle and Sun had such tight partnerships already that dramatic changes may be the exception rather than the rule, he says.

"Frankly Oracle and Sun have worked very closely for the better part of two decades and I don't really see what the companies will be able to do as a single organization that they haven't already done," King says. ■



By 2011 there will be 2 billion people  
and 1 trillion connected objects on the Web.  
A smarter planet needs smarter IT.  
Let's build a smarter planet.  
**ibm.com**/connected



THINK 



# Burning security questions

Addressing employee monitoring, security automation, mobile computing

BY ELLEN MESSMER

There's no shortage of burning questions about IT security these days, some sparked by nasty threats, others by economic concerns and some by growing use of social networking sites and cloud computing.

We spoke to about two dozen experts — IT customers, analysts and vendors — to nail down some answers:

## 1. Can you no longer avoid closely monitoring employees?

The insider threat has always existed, but in an era of economic upheaval and uncertainty, the problem is magnified. That point came across in a recent Ponemon Institute survey of 945 individuals who were laid off, fired or quit their jobs during the last year, with 59% admitting to stealing company data and 67% using their former company's confidential information to leverage a new job.

## 2. How far should IT managers go to protect corporate data?

"There's a balance," says Max Reissmueller, senior manager of IT operations and infrastructure at Pioneer Electronics, based in Long Beach, Calif. "I wouldn't want managers coming to me to keep an eye on a particular employee, wondering what they are doing every minute."

At the same time, Pioneer is determined to protect its intellectual property, customer service lists and other sensitive data.

"I don't want a disgruntled employee trying to take a bunch of information," Reissmueller says. That's a main reason the firm has installed network-access control (NAC) gear to monitor traffic to the "crown jewels" and to keep an eye on whether employees are trying to overstep their authority.

Using a ConSentry switch and NAC product, Pioneer will watch for patterns that might reveal wrongful behavior and block it. "But I don't want my security staff to become Big Brother," Reissmueller says.

All it takes is a data-leakage case to compel organizations to beef up their monitoring.

The University of Arizona went through a few data-leak imbroglios in which it had to make public notification about exposed personal data, says Eric Case, the university's information security officer.

That induced the university's information and security office to kick off a program that involved making sure that faculty staff weren't leaving sensitive data lost and forgotten in computers.

To determine that, the university has deployed data-leak prevention (DLP) freeware called Spider that can go out and look into a

targeted machine to see if it's holding data that shouldn't be there in order to either delete it or move it to a more secure server. Although the security staff did explain in depth what it was up to, "we had a couple of people freaked out because we were looking at their files," Case says, speaking about the topic at the recent Infosec World conference in Orlando.

But after calming people down, the DLP process had to proceed because "we know we have data all over the place," Case says. "Have we reduced our threat surface? Quite a lot."

Rick Haverty, director of IS infrastructure at the University of Rochester Medical Center, says laws and regulations regarding patient healthcare information leave no choice but to confront instances where it appears employees may have broken rules. One concern is an employee taking a sneak peek at someone's medical records without cause.

"People have been fired for this," he notes, adding that the start of an investigation usually involves a complaint about someone gossiping about a patient's medical circumstances. An investigation would generally involve examining log records to determine whether inappropriate access to records may have occurred.

Gartner analyst John Pescatore says the key word to think about is how "closely" to monitor employees.

"There is definitely a requirement to monitor critical business data leakage from employees, and a requirement to monitor what comes into their PCs to prevent malware," Pescatore says. "However, in the real world, there is less of a need to monitor every action a user takes, block them from every Web site that is not work-related, or try to keep them from using their work PC for anything but work, or keep them from using their home PC for work."

The trend toward work/home mixing is underway, and "security can't stop this any more than it could stop the Internet, wireless LANs or other previous trends," he says.

## 3. Should you choose a strategic security vendor or shoot for best of breed?

A huge debate these days is whether to select a strategic security vendor to provide the majority of security products and services, or opt to evaluate point products, including those from start-ups, with an eye toward best of breed.

"My tendency is to lean toward a strategic vendor if we can," says Rick Haverty, director of IS infrastructure at the University of Rochester Medical Center in New York, which includes hospitals and medical research centers. Cisco is the strategic networking vendor for URM, and using IronPort, Cisco's Web-filtering appliance, solidifies URM's business clout with

Cisco, Haverty says.

But he adds he doesn't yet see the benefit of product integration that choosing a strategic security vendor is supposed to bring, such as a common management console, in Cisco networking and security products.

"They're just not there yet," he says.

URM also looks for point products to meet the organization's needs, turning to vendors such as Voltage for e-mail encryption with business partners and Check Point for its PointSec whole-disk encryption for the desktop. Haverty says he knows he has to be pragmatic in making choices about enterprise security.

Brad Blake, director of IT at Boston Medical Center, says the outlook at the healthcare provider he works for is to buy best of breed for clinical applications but focus on a strategic vendor — or two — for security.

The main reason is the strategic security vendor approach can help stretch a budget and gain the advantage of a common management platform, he says.

Boston Medical Center considers McAfee a strategic vendor because it makes use of the vendor's large portfolio of security products and its ePolicy Orchestrator console to manage them. ArcSight is also considered a critical vendor because its security information management platform can combine log data from many sources for analysis.

Although Boston Medical Center is a "Cisco shop," the healthcare provider hasn't been impressed enough with Cisco's service to warrant expanding into Cisco security products.

George Japak, head of ICISA Labs, which tests a wide variety of security products, says Cisco is layering security such as antivirus and firewalls into switches and routers. Increasingly, the larger Fortune 2000 companies reliant on Cisco gear are choosing Cisco as their strategic security vendor as well as a way to reduce complexity in their networks.

But he argues that strategic security vendors can't be given an easy pass and "have to be held accountable" on every security function they're given.

"You can have a primary security vendor but keep other vendors in play, don't preclude other vendors," Japak says.

Gaby Dowling, manager of IT security at law firm Proskauer Rose, believes it isn't logical to

### ONLINE: More questions

Read through two more questions we pondered from the security realm.

[www.nwdocfinder.com/9730](http://www.nwdocfinder.com/9730)



## Security

continued from page 18

consider anything "strategic" if the vendor and the product can't rapidly adapt to a changing threatscape. "Just because products come from the same vendor doesn't mean they integrate well in my experience," she says.

### 4. Can security processes finally be automated?

Automation of security is a concept with momentum this year as some of the larger federal agencies, including the Department of Defense, the National Security Agency, the Department of Agriculture and Energy, are pushing for a new direction beyond the current FISMA audit mandate for compliance. They want Congress and the Obama administration to consider adopting the Consensus Audit Guidelines, a set of 20 security technical controls that encourage automation.

But can security processes be automated?

Areas considered technically mature, such as scanning and intrusion prevention, can be automated, says Gartner analyst John Pescatore. "But since the threat and technology environments change rapidly, in the real world security automation is limited. It is great to talk about but for real companies, the actual business benefit is limited," he says.

However, some IT managers say they are reluctant to make purchases in security products and services unless it contributes to automation.

"We're completely automated as far as the ID creation is concerned," says Mike Ruman, enterprise communications and messaging manager at Grant Thornton, an accounting firm with more than 50 offices and 6,000 employees. Automated provisioning can create a user ID in eight minutes and assign that individual to security groups based on job code and department, he says.

The firm uses Imanami's GroupID provisioning to synchronize with human resources and departmental databases, as well as Microsoft's Active Directory, to update employee online privileges every two hours.

"If there are changes, it keeps the information updated and user access might be closed," Ruman says. The weak link in the chain — which he saw happen once — was HR forgetting to take action in an employee termination.

Ruman notes that the auto-provisioning process in place also helps auditors because it's simple to generate reports. One of the main barriers he's seen to security automation has

been company politics, particularly "administrator turf wars" in which systems administrators squabble over tasks that are often manual.

However, skepticism about the prospect of automated security abounds.

"Like flying cars, people have been waiting for total security automation for years," says Tracy Hulver, executive vice president for marketing and products at NetForensics, a maker of security-event management products designed to help automate collection of secu-

crimeware reached an all-time high of 31,173 in December, according to the APWG (formerly Anti-Phishing Working Group) coalition?

Or that data breach costs rose to \$6.6 million per breach last year, up from \$6.3 million in 2007, according to the Ponemon Institute. Or that 3% to 5% of enterprise desktops and servers, mainly Windows, are apt to be infected with botnet code, according to security firm Damballa, based on an analysis of its customers' network traffic.

News reports are filled with such disturbing statistics, but do IT managers find themselves worrying about it all?

"We all pay a little bit of attention," says Jeff Keahey, CIO at Wardlaw Claims, a Waco, Texas, property and auto claims insurance adjuster. "But we try to evaluate their bias."

In general, it usually looks like someone is trying very hard to "get you to lean toward a certain product" and "a lot of statistics come with an advertisement in tow," he notes.

Though he does take it all with a grain of salt, Keahey says he may look at statistics as a general guideline about trends, and they may have some influence in deciding directions to take in countering threats.

One vendor, Cloudmark, which makes e-mail security products, discounts the importance of security statistics that pop up in media reports.

"An organization should be focused far more on their own internal metrics for determining their security posture, rather than on outside statistics," says Adam O'Donnell, director of emerging technologies at Cloudmark.

However, Unisys, a systems integrator, begs to differ.


Unisys over the last two years has undertaken a semi-annual survey of about 14,000 individuals in 13 countries, asking them eight questions about their perception of personal, financial and national safety online.

For businesses concerned about what consumers are thinking, the results are one factor to consider, Unisys contends, pointing to the value of statistics.

"It's fascinating to see how different the results are by country and demographics," says Tim Kelleher, vice president and general manager of managed security services at Unisys. "The world isn't homogenous. In France, no one is very worried about this stuff at all. But in Brazil and some of the Asian countries, people are feeling very insecure online. The U.S. is sort of in the middle."

In general, Kelleher thinks statistical trends are more significant than the numbers bandied about at the moment. ■

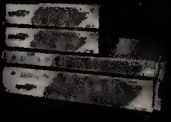

SONICWALL CDP
TAPE BACKUP



## NO CONTEST

Tape backup can be a recovery disaster.  
But there is a better way. SonicWALL CDP  
can provide easy, flexible, reliable recovery.

To see how, go to:  
[www.sonicwall.com/vstape](http://www.sonicwall.com/vstape)

PROTECTION AT THE SPEED OF BUSINESS

© 2009 SonicWALL, Inc. SonicWALL and the SonicWALL logo are registered trademarks of SonicWALL, Inc.

rity and log data.

"Unfortunately, that is something that is still years, if not decades, away from being realized," she says, adding automation has helped with some aspects of security response, "but human intervention is still required to be able to respond appropriately."

### 5. How scared should you be about security statistics?

Did you know the number of Web sites infecting PCs with password-stealing



## RSA

continued from page 1

Its OfficeScan client-server suite relies on servers in Trend's network to check the reputations of files, Web content and e-mail rather than relying on desktop protection, which may not be up-to-date.

Similarly, McAfee's CEO Dave DeWalt during his keynote address announced his company's road map toward predictive security, cloud-based sharing of threat intelligence among different categories of security devices to find and block malicious activity sooner than traditional methods.

Network services provider Savvis launched a Web application firewall service based on a choice of Imperva WAF appliances or virtual instances of its software that reside between the Internet and its network. Savvis said it thinks customers comfortable with its software-as-a-service offerings will also embrace cloud-based security.

Arthur Coviello, president of conference sponsor RSA, said his company's cooperation with Cisco and Microsoft will result in common language to enable the sharing of intelligence about data-loss threats in the cloud as well as within corporate networks.

Nevertheless, defensive measures lag far behind the known vulnerabilities of public cloud computing services, according to customer-driven groups trying to deal with the problems.

During RSA, two major cloud-security groups — one primarily based in the United States and one European — informally joined forces to pressure vendors to do more.

The Cloud Security Alliance (CSA) used the show as a platform to launch its efforts to standardize security for cloud computing with the release of its "Security Guidance for Critical Areas of Focus in Cloud Computing", an 83-page document detailing 15 areas of security concern.

Later that same day, the Europe-based group Jericho Forum served up an outline of threats it perceives.

Chris Hoff, a security consultant who wrote the architecture section of the CSA paper, shuttled from that group's launch over to the nearby Jericho Forum event to support its effort, which he says overlaps very closely with that of CSA. "Your concepts make sense," he said.

The groups, which tout members that include large corporations such as Eli Lilly, eBay and ING, need to use their influence as major customers to demand products that address cloud threats, Hoff said. "It's the large end-user organizations that will drive it," he said of the cloud-security standardization push.

There are plenty of standards needed, at least judging from the 15 cloud-security conference sessions dedicated to discussing them, but that isn't slowing the adoption of public cloud services, according to experts at the event.

In fact, widespread adoption of cloud computing services is unstoppably underway,



**In his keynote address at RSA, Cisco CEO John Chambers called cloud security a nightmare, saying it cannot be handled in traditional ways.**

according to a Deloitte-Ponemon Institute survey released at RSA. Nearly 45% of respondents have already bought cloud computing services and 22% say they are considering them, according to the survey. "Outsourced cloud is here," said Rena Mears, partner and leader with Deloitte's security and privacy services, who spoke during a conference session.

The downside is most businesses don't have a plan for checking to see if their cloud service provides the security it promises, she said, leaving the customer with uncertain security but stuck with any liability should private customer data be compromised.

Businesses are signing up for cloud services without scrutinizing the contract terms written by providers, said Randy Sabett, a privacy attorney with the firm Sonnenschein Nath & Rosenthal. "There is a shift in how businesses are striking a balance," he said. "What do we weigh more, cost savings or legal liability? They are deemphasizing the risk."

The risk comes not only from potential data loss, but also from running afoul of regulations, he said. For example, regulations may call for encrypting data in storage, but how can customers know whether providers encrypt it or not? Regulations vary from country to country, so how can a provider show that data restricted to a particular geographic location by European Union rules is staying where it's supposed to be within its multinational cloud?

Businesses should find out whether contracted services are being provided, perhaps aided by third-party certification that clouds meet established standards.

In a private briefing during RSA, HP said the issue of certification may not be as difficult as

it seems. Jim Alsop, vice president of service delivery operations for EDS, which is owned by HP, said the company is considering whether to certify cloud provider networks as secure.

Control Objectives for Information and Related Technologies (COBIT), a standard used by many corporations to meet security requirements of the Sarbanes-Oxley Act, could fit the bill, Alsop said.

A modified version of the Statement on Auditing Standards 70 (SAS 70) might also be useful, he said. SAS 70 is a set of rules set down by accountants for auditing how transactions are processed within a service organization. Adapted to the specifics of the cloud, it could be used as the basis for a standard. ISO 27001, an international data security management standard, has many of the components needed for a cloud security standard.

Reliance on cloud computing services is becoming more tempting because of the dramatic savings it can produce, but that requires checking out the inner workings of the cloud, said Renee Guttman, privacy officer for Time Warner, who spoke at RSA. Just as the cloud service itself lifts tasks from her staff, she wants to hire someone to help with those security checks.

"I want to be able to outsource some of my due diligence on a model that allows me continuous monitoring of the vendor," she said. Such third-party verification not only makes better use of her resources, it could arguably perform such assessments better than her limited staff could. In fact, that would be a requirement.

"You're darned-tootin' they better be better at it than I am," she said. ■






# CSRs-Stop taking the blame and start taking action.

Customer connectivity issues resolved in just minutes.

**Trace360**  
Talk less. Do more.

---

 **DNSstuff.com**  
Try free for 7 days!



# Getting a grip on key rotation

BY BRIAN TOKUYOSHI

One of the ways to turn a pleasant dinner conversation among CISOs and risk managers into a philosophical battleground is to introduce the topic of key rotation, which is defined as the process of decrypting data with an old key and re-keying the data with a new one.

There are many conflicting ideas about how much key rotation is necessary, how far it should go, and how often it should be done. But it's easier than you think.

Modern approaches to key rotation and a better understanding of security threat models enable you to establish a good balance between practicalities while maintaining good security principles.

In the past, key rotation was largely perceived as a security measure to defend against potential brute force attacks on cipher text. Because computer power increases over time, even if an attacker doesn't have the means to brute force a key today, it could be possible to do so in the future, so organizations periodically re-encrypted data with stronger keys.

However, a modern take on risk management finds that re-encrypting archived data is often riskier than leaving it alone. A backup tape is probably safer in a secured archived location with the original encryption, because the process of retrieving it for re-encryption introduces an opportunity for misplacement. Because of this, many IT managers are taking more of a risk-based approach to key rotation instead of doing it out of habit.

Key rotation is valuable but it should be done strategically so organizations apply efforts in the right areas instead of applying the same

policies unilaterally.

Another benefit is risk mitigation. Periodically changing keys reduces the potential data loss if the key is lost or compromised. The frequency of key rotations varies depending on many variables, such as the type of key, the operating environment, the amount of data encrypted, the classification of the data, and the application that uses the key.

Compliance laws are also driving companies to reevaluate their key rotation policies because encryption is a focal point for industry and privacy mandates. But it is critical to outline a strategic approach to key rotation issues and tools ahead of time. The National Institute of Standards and Technology provides definitions of appropriate key lengths and provides guidelines for how long keys should be used. And the PCI Data Security Standard is one example of a compliance initiative with requirements for encryption key rotations. In fact, for some companies there are multiple compliance initiatives that need to be supported simultaneously, which adds to the complexity and frequency of key changes.

The real source of pain for IT managers is the considerable time and effort that each key rotation takes, especially when dealing with poorly designed key management tools or even home-grown systems.

Many companies find that encrypting data is easy. Maintaining the keys is the hard part and is often the area overlooked when encryption projects start. What's worse, the pain associated with key rotation often grows over time because there may be multiple key repositories, too many keys to manage, and too few resources to handle the rotation manually.

The amount of manual effort involved in handling keys is attributed to the quality of the management tools and how they deal with basic services such as provisioning, key storage and workflow. In the end, homegrown efforts to satisfy these requirements tend to be inflexible, operationally costly and brittle, and cannot address the changing encryption landscape.

The way to address these issues, both for existing key rotation problems and to prevent new ones from occurring, is to establish a solid enterprise key management infrastructure.

Enterprise key management provides three primary ways to address key rotation challenges. First, it provides visibility into the state of encryption keys across multiple key repositories. This is important because it eliminates the problem of having too many encryption key silos with no top level view of which keys need to be rotated.

Second, enterprise key management provides the tools to automate the process for key rotation, so whether performing one key rotation or a hundred, it is the same relative amount of effort. With automation, security-conscious industries can rotate keys daily for sensitive systems that support things such as electronic payments and point-of-sale devices. Automation tools should also include workflow to ensure that internal procedures and processes are honored along the way.

Third, enterprise key management ensures that all key material throughout the IT environment stays safe and within the expected operating parameters. This includes enforcement of security policy, which ensures keys meet corporate guidelines for the key properties (length, type, time to live and so on) as well as for related services (how long to archive the key, recovery policies and so on).

It's time for CISOs and risk managers to put aside the debates about key rotation and get back to their pleasant dinner conversations.

*Tokuyoshi is product marketing manager at PGP Corp.*

## Five tips to tackle the key rotation problem

1. Don't go overboard — take a risk-based approach to key rotation and examine the market requirements and see if key rotation is really solving the issue that it was intended to address. Apply key rotation with the appropriate measure.
2. Define the right thing to do — Create key rotation policies appropriate to the different keys in use, with consideration for compliance requirements and industry guidelines.
3. Use the right tools — Give management tools consideration when doing an evaluation of any encryption product. Poor management tools can turn even a good application into a key management nightmare.
4. Manual rotation is a thing of the past — automate the key rotation with workflow in an enterprise key management infrastructure.
5. Keep an eye on the big picture — Consider an infrastructure that can manage all types of keys, including symmetric and asymmetric. Both have their own management and rotation policies that need enforcement and automation.

This vendor-written tech primer has been edited by Network World to eliminate product promotion, but readers should note it will likely favor the submitter's approach.



---

# KEEP ONLINE TRANSACTIONS FAST AND TIME-TO-VALUE FASTER.

---



CA Wily Application Performance Management is designed to improve the performance and availability of mission critical and revenue-generating applications. So you can quickly spot and correct online production application incidents before they become customer problems — especially in complex and high volume transaction environments. That's the power of lean.

Learn more at [ca.com/apm](http://ca.com/apm)







## GEARHEAD

Mark Gibbs

# Analyzing Twitter with Excel, Part 4

**O**ver the last three weeks I've been trying to figure out how to analyze Twitter messages using Excel 2003, something I thought would be fairly easy but it turns out there are a number of "gotchas." The goal was to track the buzz about a specific product so I wanted to retrieve Tweets that included the product's name and my first thought was to look for the historical data ... which proved to be a headache.

While the Twitter search API can provide a news feed for a given date range you only get the newest 15 Tweets in that period. This isn't going to be of much use if there was a real buzz about the product.

So, if you want all the Tweets for a given period the only choice is to get the data in HTML format from multiple requests of blocks of search results. Last week I came up with a way to retrieve the required data using two free open source utilities, cURL to grab and save the search results in a file, and grep to parse the saved data.

I wrapped these utilities in a batch file (which I call tweets.bat) to which I have since added some extra error testing. I also created another batch file, domonth.bat, that calls tweets.bat for each day of a given month. Finally a simple program I wrote is called by tweets.bat and updates a comma separated variable (CSV) file that contains a line for each date with the number of Tweets found.

To perform the analysis in Excel a data source — the CSV file — is imported into an existing spreadsheet by refreshing the source, and a graph shows the number of Tweets per day for a given month. I admit it: This is ugly, ugly, ugly, but it works and requires minimal resources.

This system covers the historical data, but usually if you're interested in the public buzz on a specific topic you'll want to monitor that in real-time or thereabouts.

As I pointed out in the first column, to get all of the Tweets in the public timeline you'll need to make arrangements with the folks at Twitter. On the other hand, if the topic you're interested in is generating 15 or less Tweets in a given period (call that X minutes) you could just repeatedly access the RSS feed every X minutes to get a quasi real-time snapshot.

Here's how to do that: In Excel set up an XML Map by selecting Data > XML > XML Source and then click on XML Maps. In the XML Maps dialog that appears click on Add then in the filename field enter <http://search.twitter.com/search.rss?q=PRODUCTNAME> (fill in what you're tracking there at the end) and then click on Open. You'll go back to the XML Maps dialog so now click on OK. Excel will then display the schema of the feed.

Drag the item pubDate from the XML tree onto your spreadsheet, say, onto cell A3. Now right click on A3 and select XML > Refresh XML data and the cells below A3 will contain the publication times of the last 15 Tweets.

To get an analysis of this data you'll need to massage the pubDate values to extract dates and times, then use a pivot table to correlate the derived values and a pivot chart to plot them. Sounds complicated? It is.

I leave as an exercise for the more intrepid reader to make the spreadsheet periodically refresh and update the graph. On the other hand, I have also wrapped the spreadsheet with an XML Map in an Xcelsius presentation so it automatically refreshes and redraws the graph.

If you want a copy of the batch files I discussed above along with cURL, grep and my nasty little program, as well as the spreadsheet and the details of the automated Xcelsius version, send an e-mail to [gearhead@gibbs.com](mailto:gearhead@gibbs.com) with the subject "TA".

*Next week, Gibbs will have something completely different from Ventura, Calif. Your alternatives to gearhead@gibbs.com.*



Keith Shaw

## COOLTOOLS

# More iPhone juice, less bulk

**The scoop:** Juice Pack Air, by Mophie, about \$80.

**What it is:** An update to the original Mophie Juice, the Air is a rechargeable external battery case for iPhone 3G users. Not only will the Air give you extra battery juice when you need

it, but the hard plastic case provides additional protection for your iPhone 3G. Mophie says the battery provides users with an additional 270 hours of standby time, up to 4.5 extra hours on 3G (9 hours on 2G), and up to 4.5 hours of data time on 3G (extra 5.4 hours on Wi-Fi). For multimedia use, the Air provides as much as 20 hours of additional audio playback time, and as many as six extra hours of video time. A button on the back of the Air and four LEDs give you quick notification on how much battery power is left on the device. Cases come in three colors: white, black or purple (interesting color choice!).

**Why it's cool:** Battery life is one of the biggest issues for iPhone 3G owners. Since iPhone users tend to spend more time online — doing e-mail or surfing the Web — it isn't uncommon for the power to run out just when you're expecting that big call. There are several options for extending the life of your iPhone 3G, but the Juice Pack Air is an excellent alternative.

The original Mophie Juice Pack provided a good amount of battery

power for the iPhone, but it was bulky and turned the sleek iPhone into a brick. Mophie has done a great job of slimming down the size and weight of the Air, so when you slide your iPhone 3G into the case, it doesn't feel as heavy as earlier models. The design of the Air has also been improved. On the earlier version you would slide the phone in and leave an open space at the top, while on this model there's a "cover" that you slide in over the top of the iPhone to provide the extra protection.

A mini-USB cable lets you synchronize the iPhone with your PC while it's attached to the Air. You can also recharge the Air and the iPhone at the same time with the cable. A handy switch lets you turn off the charging features while it's attached, letting you use up the battery in the iPhone and then switch the Air on for the recharge when needed.

**One caveat:** Because the device uses Apple's universal charging port as part of its design, you can't have the Air attached and then use the iPhone for other purposes, such as attaching it to external speakers. Fortunately, the Air is easy to detach. Also, this only works with the iPhone 3G, so owners of the first-generation iPhone, as well as iPod touch users and iPod users, will need to look elsewhere.

**Grade:** ★★★★★ (out of five).

**Mophie has made the next version of Juice Pair Air sleeker.**



*Shaw can be reached at [kshaw@nww.com](mailto:kshaw@nww.com). Follow him on Twitter at <http://twitter.com/shawkeith>.*



# MASTERS of UNIFIED COMMUNICATIONS

SPONSORED BY  
**AVAYA**



## CASE STUDY

# A Unified Campus:

## UC Bridges the Miles for Students, Teachers

### Edwin Craft, Director of Telecommunications and Interactive Video Services

WESTERN KENTUCKY UNIVERSITY

With more than 15 years of experience in the communications industry, Craft is working on his doctoral degree in Organizational Leadership. He was recently featured in *Chronicle of Higher Education*, *Forbes* and *Campus Technology*.

When Edwin Craft deployed a unified communications strategy for Western Kentucky University, he unified more than technology; he brought together the student body. Here's how:

#### How is Western Kentucky University challenged in attracting students and faculty?

Kentucky is rural, so the students we attract are spread out. Often these students are place-bound, meaning they don't travel long distances to attend classes. So we needed to extend the main campus to reach them, and we also needed to accommodate guest teachers from around the world to broaden the faculty capacity of the main campus and reach external experts.

#### What role did Avaya's unified communications solution play in addressing that challenge?

Avaya's unified communications solution proved to be a green technology that freed us from physical, infrastructure boundaries. What's more, communications isn't just about picking up the phone anymore. It encompasses voice and video, email and voicemail, and now even Facebook and MySpace. Avaya's solution gave us the core infrastructure to do what we needed. It's like a communications system for tomorrow, but we have it today.

#### Which capabilities delivered the most impact?

We got a lot of great capabilities with the platform, but video in the classroom has delivered the most impact with regard to growth and the ability to push course-work out to place-bound students. We also use the system to support emergency communications because the entire communications infrastructure is operational 24/7. Of course, there are other things we can do that our users really like—such as voicemail-to-email and bridging desk phones to mobile devices.

#### How did you prepare your network for the transition?

With any transition tied to communications we always talk about the five 9s. It's easy to say that if you throw enough bandwidth at anything, it'll work. But with all the traffic on campus, that's not always true. People want a dial tone; if it doesn't work, they lose interest. That's why, in preparing for the transition, we started with a robust infrastructure—Avaya's unified communications solution—and built from there.

#### What's the business value for the university and your staff?

The university, in its most basic sense, is responsible for teaching. UC technology has allowed us to broaden that scope, and we've effectively increased the number

of students from 14,000 prior to 2003 to 19,800 today. And that hasn't deterred from the quality of education. Faculty members are there to teach, not to be hindered by technology, so our rooms are simple and stable. That said, this more robust technology—even though it seems like things are getting more complex—makes things easier for my staff.

#### What programs have resulted from deploying Avaya's solution?

We achieve a great deal of value through IVS (interactive video services), which allows our remote campuses to host the same courses as the main campus. Several key programs have been enhanced by IVS—for example, our nursing program and a joint engineering program with University of Louisville and Murray State University. And the future is an open door. Our goal is to give every incoming student a telephone number, which will be that student's unified communications platform for receiving calls, dropping messages into email or even forwarding those calls to another number.

For more information go to:  
[www.networkworld.com/  
community/uc](http://www.networkworld.com/community/uc)

**NETWORKWORLD®**  
Custom Solutions Group



## Novell's SLES 11 is packed to the gills, keeps moving at a decent clip

New features home in improved management, integrated virtualization

BY TOM HENDERSON AND BRENDAN ALLEN, NETWORK WORLD LAB ALLIANCE

In our Clear Choice test of Novell's SUSE Linux Enterprise Server (SLES) 11, we found it to be packed with useful management tools, to have virtualization threaded through many of its processes, and to perform at rates close to the high bar set by past versions of the Linux bundle.

Installation is very similar to SLES 10, but included some new options. For example, there is a server scenario selection process and the choices include: Physical machine (also used for fully virtualized virtual machines [VM]), Virtual Machine (for paravirtualized environments such as Xen) and Xen Virtualization Host (for use as a hypervisor host platform). These match the increasing number of choices allowed for Windows 2008 server editions, where VM substrates are a part of the front-end, pre-install process.

The Xen hypervisor has been updated to Version 3.3.1. The default SLES 11 file system is now ext3, although the previous default file system, reiserfs, is still supported, as are others including ext2, jfs, and NTFS.

The default local security policies in general seem to be a bit more restrictive. For example, when trying to shut down the machine, the root/admin password is required by default.

There is a new software management subsystem called ZYpp that is used in conjunction with the long-favored YaST setup tool to correlate the dependencies of applications with other system applications while upgrading software packages thereby helping to thwart incompatibility issues. We found ZYpp speedier than previous tools, as it automated software dependency checks and delivered updated software more quickly than we've seen.

New stuff in the management and security realms for SLES 11 includes an open source program called Nagios — a network monitoring tool that watches network access activity for different workstations on your network.

Nagios Version 3.0.6 has a Web-based interface — so an Apache Web server must be installed as well. The default configuration needs a little fine-tuning but most of the options were pre-configured. Nagios can check whether different network services (for example SMTP, POP3, HTTP) are running, then create alerts by e-mail, cell phone or page if something stops responding. Also, Nagios has the capability to monitor basic host resources, processor load and disk usage. We turned off some services, which Nagios detected quickly and proceeded to send an e-mail to the appropriate place.

SLES 11 also includes an updated version of StrongSwan, which is an IPsec stack that can be used for creating either site-to-site or remote user VPN connections. StrongArm has been upgraded to support IPv6 tunneling. We did not test this VPN service.

In addition, there is a Web-based graphical management tool for IKEv2 encryption key management for various applications, including the IPv6 IPsec VPNs now permitted with StrongSwan.

And, finally, Novell has produced a YaST Security module, which consolidates a raft of formerly separate settings (file permissions, and login restrictions parameters, for example) into a single and comprehensive (and finally usable) user interface. For instance, during testing we were able to change policy settings and form user folder permissions without having to leap back and forth between formerly disparate user interfaces.

Novell also added Trusted Computing Platform capabilities for some

### NETRESULTS

<b>Product</b>	<b>SUSE Linux Enterprise Server Version 11</b>
<b>Vendor</b>	Novell www.novell.com
<b>Price</b>	Annual subscriptions starting at \$349 per server.
<b>Pros</b>	Lots of streamlined, simpler administration processes; much easier to deploy.
<b>Cons</b>	'Tickless' kernel may cause application incompatibilities; very slight decrease in performance.
<b>Score</b>	<b>4.13</b>

### SCORECARD

Action	Weight	
Installation/compatibility	25%	<b>4.</b>
Administration	25%	<b>4.5</b>
Security	25%	<b>4</b>
Performance	25%	<b>4</b>
<b>Total score</b>		<b>4.13</b>
<b>Scoring key:</b> 5: Exceptional; 4: Very good; 3: Average; 2: Below average; 1: Subpar or not available.		

encryption management capabilities, but we did not test these.

### Developers arise

There are quite a number of new features in SLES 11 (although these items are missing from SLED 11 [www.nwdocfinder.com/9722]) for developers, including updated versions of the application debugger gdb and the gcc application compiler. One nice new feature is the included .Net development framework dubbed Mono, which has partial compatibility with Microsoft .Net framework. Included is an application called Mono Analyzer that's used to check if your .Net application is compatible with Mono's .Net framework emulation. Novell says about half of the .Net applications it tested worked without any changes.

Also included in the SLES 11 developer toolkit is ltrace, which is a useful command for debugging applications, similar to Sun's dtrace tool. The idea behind these two tools is to find application execution-time problems by monitoring what they do, how they branch, and most importantly, how long they take to do these things so that the application can be optimized for performance.

But unlike the Sun tool, which requires the source code to be available in order to debug the application, ltrace works by catching and retrieving

See SLES, page 28



#### EDUCATION

University of Indianapolis  
Hacked: 11K Student,  
Faculty, Staff records stolen

Trojan horse captures data  
on 2,300 Oregon taxpayers

#### TECHNOLOGY

HOTEL CHAIN FALLS VICTIM  
TO 14,000 DATA-STEALING  
MALWARE INCIDENTS

40 Million  
Credit Card  
Numbers Stolen  
from TJX

Millions of U.S. customers were  
informed today that millions of  
their credit card numbers were

98,930 Affected in  
Forever 21 Data Breach

## THINK THE NEXT GENERATION OF MALWARE doesn't have a headline waiting for you?

### THINK AGAIN.

Data-stealing malware is smarter, faster and more advanced than ever. It's infiltrating the most secure enterprises and yours could be next. But with Trend Micro™ Enterprise Security, powered by the Trend Micro Smart Protection Network, you'll be ready. This unique combination of solutions and services is the next-generation, cloud-client security infrastructure that blocks the most sophisticated threats—before they reach your network. Download our eBook and learn how easily Web threats like data-stealing malware can evade your current security solution and what you can do about it.

- Download our *Outthink the Threat* eBook and register for a free, onsite risk assessment now at [trendmicro.com/thinkagain](http://trendmicro.com/thinkagain). Or contact us for more information at 877-21-TREND EXT. 53





# CLEAR CHOICE TEST NOVELL'S SLES 11

## SLES

continued from page 26

ing the shared library calls made by the process of the application or signals received while it's running. The result is that both developers and even enlightened civilians with root rights can watch application behavior to ascertain the nature of problems or optimizations.

### Popping the kernel

SLES 11 uses the 2.6.28 Linux kernel (SLES 10 initially used 2.6.16). This kernel is different in that it runs in a "tickless" mode by default, which eliminates system ticks (timer events sent to the CPU at regular intervals) and therefore lets the CPU potentially rest for long periods of time during inactivity — if applications support this conservation state, that is. This upgrade gives SLES 11 a greener side as tick-based kernels are interrupted by convention a thousand times per second to see if there's work to do (see Green OS test for discussion of tickless Linux kernel at [www.nwdocfinder.com/9621](http://www.nwdocfinder.com/9621)).

Control groups (cgroups) comprise a new kernel feature that implements a minimal file system interface to create task groups, handle permissions and task assignments.

The cpuset system, which uses cgroups, is a new feature used to divide resources by partitioning CPU and memory resources into separate groups. Processes running inside one of the cpuset groups won't be able to run on other CPUs/cores not in the cgroup. This lets administrators force applications to 'home' to a specific CPU core.

A command-line tool, called cset, is used to create and modify the cpuset groups. In our test, this mechanism did restrict the usage to those administratively desired CPUs, when running a process inside one of the CPU sets. We could even move processes already running into a set to restrict their access to the target server CPU cores.

Another feature, Swap-over NFS, allows swap space (virtual memory) to be allocated onto an NFS share instead of on the local machine's hard drive. This allows one to utilize the vast storage of an NFS share, and increases our addiction to NFS (interestingly, developed by Sun).

Novell has also included some pre-release code in this bundle to give users a preview of things to come. The previews include ext4 (successor to ext3 filesystem), eCryptfs (a POSIX-compliant cryptographic filesystem), iSNS (internet storage naming service) and Hot Add Memory (only applies to certain hardware, and none we had in the lab).

### Gauging performance

In our business benchmark logic performance test we used the Java-based SPECjbb2005 tool. We ran tests on the native operating system running directly on the hardware server and we assessed performance in various virtualization scenarios.

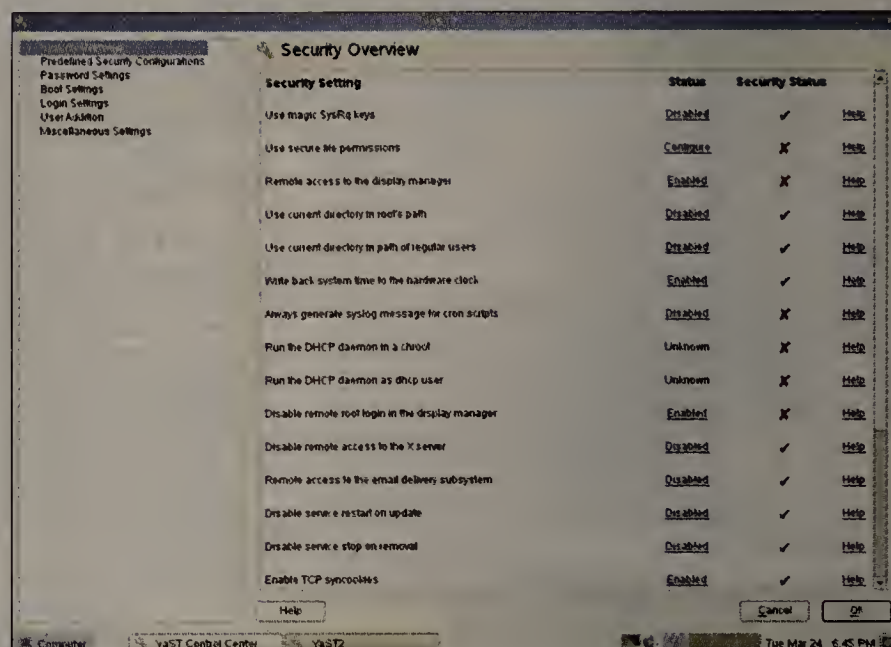
For the native performance test, we had to downgrade SLES 11's Java version to 1.5 from the newer preinstalled Java 1.6 to get an equal playing field result to previous tests done with Java 1.5 running on SLES 10. After several test runs of SPECjbb2005, SLES 10.2 with Java 1.5 completed an average of 33,396 Basic Operations/Sec (BOPs), while SLES 11 completed an average of 30,065 BOPs. The nominally slower performance is likely because SLES 11 uses ext3 as the default file system, which some claim is slower than reiserfs, the default files system with SLES 10.

To be fair, the Java 1.6 version supplied with SLES 11 did perform somewhat faster, hitting 42,581.5 BOPs. We did not run a native test on SLES 10.2 with Java 1.6, so we have no comparative number there.

We also ran some virtualization performance tests to ascertain any changes when running both existing SUSE 10 and new SUSE 11 VMs on the Xen 3.3.1 hypervisor included with SuSE 11.

In this test, we ran three SLES 10.2 VMs on a server running SLES 11 Xen 3.3.1 as the hypervisor. These VMs were the same ones used in the SLES 10.2 Xen testing. Again we had to run one set of tests of SUSE 11 with Java 1.5 in place to get the direct comparison with performance numbers gathered for SLES 10.

The overall average for the same VMs with SPECjbb2005 running



With its new SUSE 11 bundle, Novell has included a YaST Security module, which consolidates a raft of formerly separate security settings into a single and comprehensive user interface.

under SLES 10.2 Xen 3.2 with Java 1.5 was 33,956 BOPs on each VM (see article at [www.nwdocfinder.com/9622](http://www.nwdocfinder.com/9622)) compared with 33,264.17 bops on each VM under SLES 11 Xen 3.3.1. While these results are quite close, performance for the newer combination has decreased slightly.

In order to compare performance of SLES 10 VMs against performance of SLES 11 VMs when running on the new Xen 3.3.1 hypervisor we had to deploy Java 1.6 on both operating system versions before we could get apples-to-apples results from SPECjbb2005. The SLES 10 VMs yielded an average of 42,166 BOPs/VM across test runs while SLES 11 VMs averaged 40,820.11 BOPs. Based on these numbers, SLES 11 performance has decreased slightly. The overall BOPs count was likely higher across all VM measurements in these tests because Java 1.6 is faster than Java 1.5.

We also ran tests with IOMeter to ascertain disk performance based on test regimens we've used to test VM and native operating system performance. These tests showed very little difference between SLES 10.2 and SLES 11.


### Conclusion

While many of the changes in SLES 11 are incremental, the inclusion of Mono tools and Solaris-like developer tools make us appreciate SLES 11 more as a server platform — especially as it's easier than ever to pre-select/determine a server configuration and application build. Novell has paid attention to system installers that want up-front choices that are easily deployed and managed. There were a few rough edges, but Novell has done a lot to give especially busy system integrators and installers easily understood deployment configuration loads with virtualization in mind. It's their best yet.

*Henderson and Allen are researchers for ExtremeLabs in Indianapolis. Contact them at [kitchen-sink@extremelabs.com](mailto:kitchen-sink@extremelabs.com).*

■ **Henderson** is a member of the Network World Lab Alliance, a cooperative of the premier testers in the network industry, each bringing to bear years of practical experience on every test. For more Lab Alliance information, including what it takes to become a partner, go to [www.networkworld.com/alliance](http://www.networkworld.com/alliance).





# Your IT challenges come in all sizes. So do our solutions.

IT problems happen, but disruption doesn't have to be a part of the process. From power outages to downed email, SunGard is there to keep it all flowing. What makes 10,000 customers trust and depend on SunGard? A 30-year history of doing it right.

With the widest range of Information Availability services in the industry, SunGard offers the solutions to cover it all—no matter what the availability requirement, from production to recovery. SunGard's infrastructure has redundancies at every level—we've invested so you don't have to. At SunGard, we know you need higher levels of availability, and we deliver. So leave your worries to us.

- **AdvancedRecovery<sup>SM</sup>** with a 100% recovery record and a breadth of services offered
- **AdvancedHosting<sup>SM</sup>** with over 2,000 customers and 34 production facilities with a range of managed IT services
- **Consulting** with more than 100,000 action plans delivered
- **Continuity Management Software** the most widely used to keep businesses up and running

To learn more about how to keep your people and information connected, visit [www.availability.sungard.com/sg1](http://www.availability.sungard.com/sg1) or call 1-866-673-6616.

**SUNGARD**  
Availability Services

Keeping People  
and Information  
Connected.



# SECURITY TRAINING

## How to create an effective end-user security awareness program

BY LYNN HABER

Installing the latest security hardware and software means nothing if users don't practice cyber safety. And the best way to get users to "think security" is to create an ongoing culture of security at your company.

"Security awareness isn't one of those things that organizations do for fun. It's 24/7 and accountability starts with the CEO and is pushed to all corners of the organization," says Larry Ponemon, founder of the Ponemon Institute, a pri-

vacy and data protection research firm in Traverse City, Mich.

The stakes are high and getting higher all the time. In January, the Identity Theft Resource Center (ITRC) reported that the number of data breaches in 2008 increased 47% compared to 2007. The organization also reported that 35.2% of breaches were due to human error.

And Ponemon recently released a study showing that the average cost of a data breach grew to \$202 per record

compromised in 2008, up from \$197 per record in 2007. In addition, the average security event cost individual companies \$6.6 million per breach in 2008, up from \$6.43 million in 2007 and \$4.7 million in 2006.

Worse, security breaches result in a loss of consumer confidence, which translates into customers taking their business elsewhere.

So, what are the keys to a successful security awareness program? Creating a culture of security starts at the top, includes individuals from all departments and groups, is based on predetermined policy and subsequent controls, is consistently revisited and updated, and is practiced daily.

### Security is Job One

Computer security is a fast moving target. Today there are more threats, vulnerabilities, portable storage devices and there's increased mobility. There's also less of a wall between one's personal

See Security, page 32

“

TODAY, USERS ARE MORE AWARE OF EXISTING THREATS, BUT THREATS ARE MORE SOPHISTICATED AND THEY MIGRATE FASTER.”

MAX REISSMUELLER,  
senior manager of IT  
infrastructure and opera-  
tions, Pioneer Electronics  
in Long Beach, Calif.







## HIGHER PERFORMANCE SHOULDN'T WASTE YOUR ENERGY.

Get the high-performance servers your company needs without having to worry about rising energy costs. Introducing the IBM® System x3650™ M2 Express, with the blazing fast, ultra-energy-efficient Intel® Xeon® processor 5500 series and the IBM Systems Director Active Energy Manager™ designed to monitor energy consumption, so you can better plan your energy usage and manage operating costs.



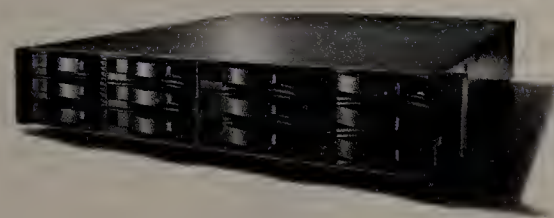
**express  
advantage™**

### BUNDLE AND SAVE

Act now. Available through  
IBM Business Partners.

[ibm.com/systems/knowyourenergy](http://ibm.com/systems/knowyourenergy)

1 866-872-3902 (mention 6N8AH16A)



### IBM SYSTEM x3650™ M2 EXPRESS

**\$2,029.00**

OR \$54/MONTH FOR 36 MONTHS¹

PN: 7947E1U

Featuring up to 2 Intel Xeon processor 5500 series with speeds up to 2.93 GHz/6.4 GT

Energy-efficient design incorporating low 675 W and 92% efficient PS, 6 cooling fans, altimeter

Up to 128 GB via 16 DIMM slots (availability 2Q 2009) of DDR3 memory with clock frequency up to 1333 MHz

### IBM SYSTEM STORAGE™ DS3200™ EXPRESS

**\$4,495.00**

OR \$119/MONTH FOR 36 MONTHS¹

PN: 172621X

External disk storage with 3 Gbps serial attached SCSI (SAS) interface

Easy to deploy and manage with the DS3000 Storage Manager

¹ IBM Global Financing offerings are provided through IBM Credit LLC in the United States and other IBM subsidiaries and divisions worldwide to qualified commercial and government customers. Monthly payments provided are for planning purposes only and may vary based on your credit and other factors. Lease offer provided is based on an FMV lease of 36 monthly payments. Other restrictions may apply. Rates and offerings are subject to change, extension or withdrawal without notice. IBM hardware products are manufactured from new parts or new and serviceable used parts. Regardless, our warranty terms apply. For a copy of applicable product warranties, visit [www.ibm.com/servers/support/machine\\_warranties](http://www.ibm.com/servers/support/machine_warranties). IBM makes no representation or warranty regarding third-party products or services. IBM, the IBM logo, IBM Express Advantage, System Storage and System x are registered trademarks or trademarks of International Business Machines Corporation in the United States and/or other countries. For a complete list of IBM trademarks, see [www.ibm.com/legal/copytrade.shtml](http://www.ibm.com/legal/copytrade.shtml). Intel, the Intel logo, Xeon and Xeon Inside are trademarks of Intel Corporation in the U.S. and other countries. All other products may be trademarks or registered trademarks of their respective companies. All prices and savings estimates are subject to change without notice, may vary according to configuration, are based upon IBM's estimated retail selling prices as of 3/4/09 and may not include storage, hard drive, operating system or other features. Reseller prices and savings to end users may vary. Products are subject to availability. This document was developed for offerings in the United States. ©2009 IBM Corporation. All rights reserved.



life and work life. The things to protect and protect against are changing.

That means educating users about security is more difficult, demanding and necessary than ever before.

"Today, users are more aware of existing threats, but threats are more sophisticated and they migrate faster," says Max Reissmueller, senior manager of IT infrastructure and operations at Pioneer Electronics in Long Beach, Calif.

Reissmueller is responsible for user security awareness for roughly 1,600 employees at about 15 locations in North America. Pioneer Electronics has a formal security review board that updates policy annually and disseminates changes to users.

But one major problem when it comes to user training is that security is not the user's primary job. "The end user doesn't do security for a living so their focus isn't on how to keep the company secure; it's how to best do their job," Reissmueller says.

In fact, industry experts agree that social engineering makes it difficult for enterprises to keep up with the rapidly changing vulnerability landscape. You can't expect users to be security experts, but you can teach them how to notice when something looks suspicious, and who to call when a security-related issue arises.

Another key is to put security awareness in the larger context of protecting a company's assets, revenue and reputation. "Policy is often written with little or no consultation. End users get e-mails to be aware about threats, but there's no context," says Sam Curry, vice president, product management and strategy at RSA, the security division of EMC.

Not only does Curry believe that creating a culture of security requires the involvement of all the organization's departments and groups, but that it's paramount that users understand why their actions create a risk for the organization.

What happens when security risk isn't put in context for users? According to RSA's 2008 Insider Threat Survey, "People will do as they will, regardless of awareness of best security practices."

The survey, which polled 417 people from North America and Latin America, found that 94% were familiar with their organization's IT security policies, yet 53% have felt the need to circumvent IT security in order to get their work done.

#### Best practices

Pioneer's Reissmueller says there's security compliance and there's security awareness,

## NEW YORK RAISES THE BAR

# N

ew York State is extremely concerned about phishing in general, and more specifically spear phishing, highly targeted phishing attacks designed to penetrate organizations, government agencies and groups.

Beginning in 2005, the state Office of Cyber Security & Critical Infrastructure (NYS-CSCIC) along with the Anti-Phishing Working Group, AT&T and the SANS Institute, ran its first antiphishing pilot project.

The goal was to raise employee awareness of the danger of phishing scams and to provide employees with information to help protect themselves and the agency. The project was also designed to gain a better understanding of the effectiveness of security training.

The first exercise was conducted with 10,000 users who were unaware of the project. The first step of the exercise was to distribute an informational bulletin alerting users to the perils of phishing and providing steps to take if they encounter malicious activity.

Next, the mock phishing scam exercise involved sending an e-mail to the group that appeared to be coming from a legitimate source, the agency's Information Security Office, and contained a link to the NYS-CSCIC Web site with instructions to visit to check the security of their password.

If they clicked on the link and attempted to type in their password they failed the test. While 17% followed the link, 15% of the e-mail recipients attempted to interact with the fake password form.

Those individuals who passed the test received a congratulatory message; those who were duped were directed to a tutorial on how to be aware of phishing scams.

Another mock phishing exercise was conducted on the same employee audience two months later. The goal was to assess if they learned anything from the first exercise. This time, employees were sent an e-mail that appeared to come from the agency's help desk with a subject line that read "Internet Connection Problems."

The e-mail informed users of Internet connection outages because of a suspected cybersecurity event, and contained a link to a dummy NYS-CSCIC Web site where they were asked to assist the agency by answering some questions about connectivity issues.

Those who followed the link and attempted to answer questions were notified that they fell prey to the exercise and were given a feedback survey to explain their actions. Fourteen percent followed the link but only 8% attempted to input information.

William Pelgrin, chief cybersecurity officer and director, NYS Office of Cyber Security & Critical Infrastructure Coordination, Albany, N.Y., was pleased with the results of the phishing exercise.

"Cybersecurity awareness is about cultural change, repetition of exercises like the scam phishing, help," he says.

In early 2008, NYS-CSCIC rolled out a stand-alone 10 module computer-based security training program that included

interactive exercises, such as the scam phishing program. The introductory, non-technical course also includes modules on security accountability, social engineering/phishing, security threats and other issues that users need to be aware of.

Later that year, a server version of the same training program was made available to state and local governments through the Multi-State Information Sharing and Analysis Center.

This year, NYS-CSCIC will conduct more periodic, automated, interactive exercises, in a manner similar to the phishing pilot, in its efforts to create a culture of security through experiential learning.

—LYNN HABER

### TOP 5 MISTAKES USERS MAKE

1. Write down passwords.
2. Click on anything that has a link in an e-mail or open attachments they're not expecting.
3. Lead personal lives online at work and store personal information on work computers.
4. Share log-on information.
5. Walk away from their computers with the computer screen unlocked.



and they're not the same thing. Security awareness is not a check-box item. It's also not a one-time or even two-times-a-year event.

Security awareness must be ongoing "to keep the knowledge fresh and real in the mind of the end user," he says.

The training often begins by working to get users to really understand why security awareness is necessary.

"Organizations want users to internalize the problem. They want employees to do the right thing because it's the right thing to do, not because you're watching them," says Mark Rasch, a Bethesda, Md., attorney specializing in computer security and regulatory compliance. Rasch was also the former head of the U.S. Department of Justice computer crime unit.

A common component of security awareness training is a DVD, video or Web-based module. Companies also require that all employees read and sign Internet and acceptable-use policy and security policy documents.

"Policy must also reflect the culture of the company and its values," Rasch says. Furthermore, policy must be enforced with

training. "The longer an organization goes without training, the greater the divergence between the written one [policy] and the unwritten one, or the one users are following," he adds.

Many organizations offer security awareness training. For example, SCIPP International, a global nonprofit organization in Vienna, Va., offers security awareness certification for individuals and organizations.

#### Hands-on training

In 2005, New York State developed an antiphishing exercise in conjunction with The Anti-Phishing Working Group, AT&T and the SANS Institute. The exercise involved 10,000 employees who were unaware they were participating in a security exercise.

In the exercise, 15% of employees fell prey to a phishing scheme. After the results were tallied, these individuals got a message informing them that they had fallen for a phishing e-mail and directing them to a brief tutorial on how to be more aware of phishing scams.

The organization launched a different online exercise to the same employee population two months later and saw a 50% improvement. Users who failed the second exercise were asked to participate in a feedback survey to determine why they took the action they did.

The goal of the exercise was to understand how well the state communicates and how well users learn, according to William Pelgrin, chief cybersecurity officer and director, NYS Office of Cyber Security & Critical Infrastructure Coordination, Albany, N.Y.

"Just telling people that phishing is out there isn't very effective. It's better for users to have a tactile interactive experience," he says.

#### Changing behavior

Some low-level activities that organizations use to create a security-conscious user is display posters, run banners on the company's intranet, host a computer awareness day and distribute security training material.

An additional training tool is to run mock scenarios to reinforce what to look for, what action to take and who to contact. "The user has to know, this is what you have to do and why you have to do it," Rasch says.

It's also important for organization's to provide role-based training for individuals with specific jobs and responsibilities, says Mark Wilson, IT specialist, information security with NIST Computer Security Division, Gaithersburg, Md.

Reissmueller takes a multi-pronged approach to security-awareness, which includes penetration testing, because he finds that policy and education alone aren't enough.

"The goal is to make security awareness a partnership between the end user and the business, something they do without realizing they're thinking about it," he says.

*Haber is a freelance writer. She can be reached at lthaber@comcast.net.*

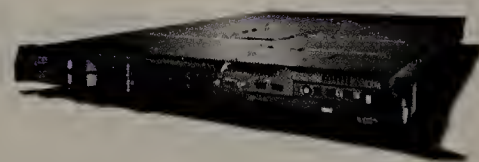
## TEN STEPS TO SECURITY SAFETY

1. Conduct an overall assessment of existing vulnerabilities.
2. Develop Internet and acceptable use policy.
3. Sell the plan and build the value model. Get C-level sponsorship.
4. Educate and awareness. Includes everyone who touches information assets or is involved in infrastructure.
5. Put security awareness in context.
6. Know how to recognize that there may be a problem.
7. Understand how to deal with problems.
8. Allow for dialog, listen to end users concerns, and revisit policy.
9. Never treat security awareness as a check-box item.
10. Practice security awareness daily.

## SAVE ENERGY WITHOUT WASTING YOUR OWN.

With IBM® System x3550™ M2 Express and the IBM Systems Director Active Energy Manager™

**IBM** express advantage™



**IBM SYSTEM x3550™ M2 EXPRESS**  
**\$1,815.00**

PN: 7946E1U

Featuring Intel® Xeon® processor 5500 series with speeds up to 2.93 GHz/6.4 GT

Energy-efficient design incorporating low 675 W and 92% efficient PS, 6 cooling fans, altimeter

Up to 128 GB via 16 DIMM slots (availability 2Q 2009) of DDR3 memory with clock frequency of up to 1333 MHz

[ibm.com/systems/energysaver](http://ibm.com/systems/energysaver)  
**1 866-872-3902** (mention 6N8AH17A)

IBM hardware products are manufactured from new parts or new serviceable used parts. Regardless, our warranty terms apply. For a copy of applicable product warranties, visit [www.ibm.com/servers/support/machine\\_warranties](http://www.ibm.com/servers/support/machine_warranties). IBM makes no representation or warranty regarding third-party products or services. IBM, the IBM logo, IBM Express Advantage, System Storage and System x are registered trademarks or trademarks of International Business Machines Corporation in the United States and/or other countries. For a complete list of IBM trademarks, see [www.ibm.com/legal/copytrade.shtml](http://www.ibm.com/legal/copytrade.shtml). Intel, the Intel logo, Xeon and Xeon Inside are trademarks of Intel Corporation in the U.S. and other countries. All other products may be registered trademarks or trademarks of their respective companies. All prices and savings estimates are subject to change without notice, may vary according to configuration, are based upon IBM's estimated retail selling prices as of 3/4/09 and may not include storage, hard drive, operating system or other features. Reseller prices and savings to end users may vary. Products are subject to availability. This document was developed for offerings in the United States. ©2009 IBM Corporation. All rights reserved.





# Broadcom bids to buy Emulex

BY ELIZABETH MONTALBANO, IDG NEWS SERVICE

Following a rejection of efforts to purchase the company in January, Broadcom last week made an unsolicited bid to purchase Emulex for \$764 million.

This marks the latest industry move in a data center convergence frenzy involving everyone from Cisco to HP.

Broadcom sent a letter to Emulex's board of

directors offering to buy all outstanding shares of Emulex common stock for \$9.25 per share, a 40% premium of the closing price of Emulex's stock on Monday, according to Broadcom.

Broadcom produces semiconductors used mainly in communications products, such as communications networks, cell phones and cable set-top boxes. Emulex provides technology for connecting storage, servers and networks in data centers.

In the letter, Broadcom President and CEO Scott McGregor reiterated his belief that the deal makes sense for both companies. He said Broadcom is going public with its offer following the breakdown of talks between the companies in January and subsequent poison-pill tactics by Emulex to avoid further engagement.

"It is difficult for us to understand why Emulex's Board of Directors has not been open to consideration of a combination of our respective companies," he wrote. "We would much prefer to have engaged in mutual and constructive discussions with you. However this opportunity is in our view so compelling we now feel we must share our proposal publicly with your shareholders."

In a statement last week Emulex confirmed it received the bid from Broadcom and said its board is reviewing the proposal.

Broadcom wants Emulex mainly for its Fibre Channel storage-networking expertise, according to McGregor, and thinks the deal would benefit shareholders, customers and employees of both companies for several reasons. Not only would Emulex shareholders receive a premium on their shares, he said, but the combined company, which has little product overlap, could use its portfolio to provide low-cost, network-converged storage and networking to customers, he said.

The logistical and cultural integration of the companies would be fairly painless as well, McGregor said, because their offices are close to one another in Orange County, California, and both companies mainly employ highly skilled engineers.

"We have a great deal of respect for the technical achievements of the Emulex team, and believe the continued motivation and productivity of Emulex's employees is critical to our combined success," he wrote. "Broadcom has a culture rich in innovation, high quality execution, and a willingness to invest aggressively." ■

# HP BladeSystem Matrix takes aim at Cisco

BY JON BRODKIN

HP has rolled out BladeSystem Matrix, a converged software, server, storage and network platform designed to compete against Cisco's Unified Computing System.

BladeSystem Matrix, announced last week, weaves numerous hardware and software pieces together into one system, creating "an integrated pool of resources that operate in both physical and virtual environments," HP says. A self-service portal lets IT shops quickly design, deploy and optimize applications, the company says.

The idea is to eliminate the "islands" of IT in which separate teams manage servers, networking, power and virtual machines, says Jim Ganthier, HP's vice president of marketing for infrastructure, software and blades.

"What if the data center were just one large pool, a pool of compute, a pool of networking and storage, all run by a very simple, easy-to-use management framework," he says.

HP's announcement comes two months after Cisco unveiled UCS, which will tie together compute, network, virtualization, storage access and management technologies into one platform. The Cisco UCS is designed for rapid application deployment in highly virtualized data centers.

Also competing in this market is Liquid Computing, a relatively new vendor that boasts of its ability to support virtualized and bare-metal applications with the same management system. Liquid Computing has its unified platform on the market, while Cisco's will not be generally available until June.

HP's BladeSystem Matrix starts at \$150,000.

Liquid and HP have both criticized Cisco for focusing solely on virtualization at the expense of applications running on physical servers. Cisco documentation on UCS says it does support bare-metal operating environments, but HP says its own system goes a step further by managing physical and virtual resources from

the same pane of glass.

HP's BladeSystem Matrix starter kit comes in a full rack with ProLiant blades; a StorageWorks array; HP Virtual Connect Flex-10 Ethernet and 8GB Fibre Channel modules; and Insight Dynamics software to manage and automatically provision resources. For virtualization, HP gives customers a choice of VMware, Microsoft and Citrix hypervisors.

Starter kits can be as small as a few blades in one rack, but expansion kits based on a modular architecture will let customers scale up without limits, Ganthier says.

HP last week also announced a new LeftHand storage-area network product and other storage systems designed for virtual servers. The various products are all based on the idea that there should be more flexible connections between servers and storage and that IT shops should be able to converge on a single infrastructure that eliminates complexity, according to HP. Ganthier promised several other announcements on this theme in the next couple of months. ■

■ **Network World**, 492 Old Connecticut Path, Framingham, MA 01701-9002, (508) 766-5301.

Periodical postage paid at Framingham, Mass., and additional mailing offices. Posted under Canadian International Publication agreement #PM40063731. Network World (ISSN 0887-7661) is published weekly, except for a combo issue in November and the last week and first week in each of the following months: Dec./Jan., March/April, May/June, June/July and Aug./Sept. by Network World, Inc., 492 Old Connecticut Path, Framingham, MA 01701-9002.

**Network World** is distributed free of charge in the U.S. to qualified management or professionals.

To apply for a free subscription, go to [www.subscribeNW.com](http://www.subscribeNW.com) or write Network World at the address below. No subscriptions accepted without complete identification of subscriber's name, job function, company or organization. Based on the information supplied, the publisher reserves the right to reject non-qualified requests. Subscriptions: 1-877-701-2228.

Nonqualified subscribers: \$5.00 a copy; U.S. - \$129 a year; Canada - \$160.50 (including 7% GST, GST#126659952); Central & South America - \$150 a year (surface mail); all other countries - \$300 a year (airmail service). Four weeks notice is required for change of

address. Allow six weeks for new subscription service to begin. Please include mailing label from front cover of the publication.

**Network World** can be purchased on 35mm microfilm through University Microfilm Int., Periodical Entry Dept., 300 Zeeb Road, Ann Arbor, Mich. 48106.

**PHOTOCOPYRIGHTS:** Permission to photocopy for internal or personal use or the internal or personal use of specific clients is granted by Network World, Inc. for libraries and other users registered with the Copyright Clearance Center (CCC), provided that the base fee of \$3.00 per copy of the article, plus 50 cents per page is paid to Copyright Clearance Center, 27 Congress Street, Salem, Mass. 01970.

**POSTMASTER:** Send Change of Address to **Network World**, P.O. Box 3090, Northbrook, IL 60065. Canadian Postmaster: Please return undeliverable copy to PO Box 1632, Windsor, Ontario N9A7C9.

Copyright 2009 by Network World, Inc. All rights reserved. Reproduction of material appearing in Network World is forbidden without written permission.

Reprints (minimum 500 copies) and permission to reprint may be purchased from Reprint Management Services at (717) 399-1900 x128 or [networkworld@reprintbuyer.com](mailto:networkworld@reprintbuyer.com). USPS735-730



**Compliance should be seen as a  
game you can win...not as a maze  
you get lost in.**



### **Compliance Reporting**

Provide immediate reports to management on your organization's compliance posture for a wide variety of standards such as PCI or FDCC.

### **Security Monitoring**

Unify real-time user and network monitoring data with in-depth vulnerability and configuration analysis tools.

### **IT Auditing**

Monitor USB devices, virtual systems, running and installed applications, sensitive data sharing and system configurations.

TenableSecurity.com ■ Nessus.org



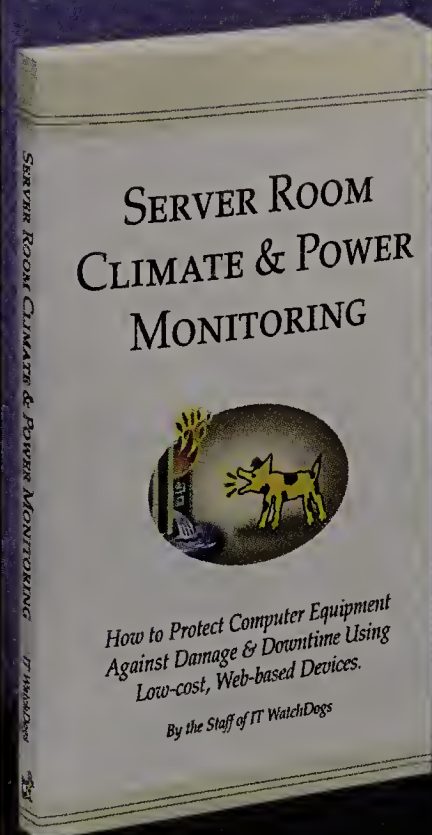
**TENABLE**

Network Security®

Unified Security Monitoring



# Server room climate worries?



## Get our free book.



E-mail [FreeBook@ITWatchDogs.com](mailto:FreeBook@ITWatchDogs.com) with your mailing address or call us at 512-257-1462

## BE THE FIRST TO KNOW

Receive **INSTANT NOTIFICATION** when conditions threaten your server room

**MINIMIZE DOWNTIME** and keep your business running

**COST EFFECTIVE** and scalable for any size business

### Monitor:

- Temperature • Humidity • Power Failure
- Water on the Floor • Physical Security
- Video • Smoke & Fire

### Notification:

- Phone Call • Text Message • E-Mail • Snmp Trap

Come see the new WEB600 at

## INTEROP®

LAS VEGAS | MAY 17-21, 2009

**Booth 1867**



**SENSAPHONE®**  
REMOTE MONITORING SOLUTIONS

[www.sensaphone.com](http://www.sensaphone.com)

MADE IN THE  
**USA**

877-373-2700

## Instantly Search Terabytes of Text

- ◆ over two dozen indexed, unindexed, fielded data and full-text search options
- ◆ supports hundreds of international languages
- ◆ file parsers / converters for **hit-highlighted** display of all popular file types
- ◆ Spider supports static and dynamic web data; **highlights hits** while displaying links, formatting and images intact
- ◆ API supports .NET, C++, Java, SQL, etc. New .NET Spider API

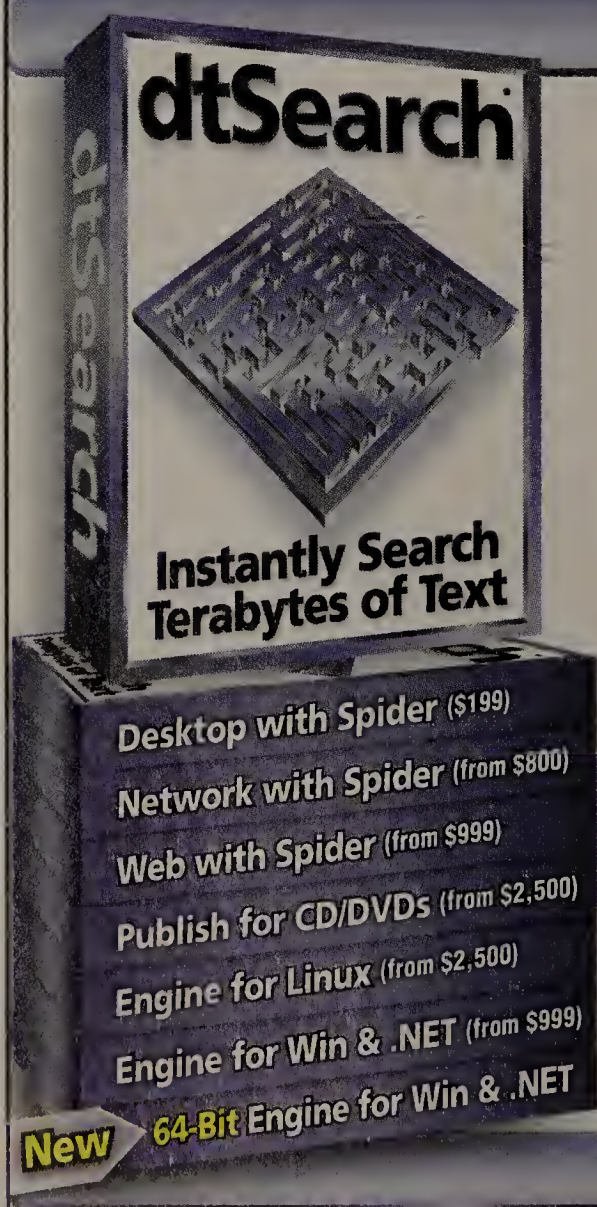
The Smart Choice for Text Retrieval® since 1991

- ◆ "Bottom line: dtSearch manages a terabyte of text in a single index and returns results in less than a second" – *InfoWorld*
- ◆ "For combing through large amounts of data," dtSearch "leads the market" – *Network Computing*
- ◆ dtSearch "covers all data sources ... powerful Web-based engines" – *eWEEK*
- ◆ dtSearch "searches at blazing speeds" – *Computer Reseller News Test Center*

See [www.dtsearch.com](http://www.dtsearch.com) for hundreds more reviews, and hundreds of developer case studies

Contact dtSearch for fully-functional evaluations

1-800-IT-FINDS • [www.dtsearch.com](http://www.dtsearch.com)





## ■ Editorial Index

<b>■ A</b>		
Advanced Micro Devices	10, 16	
Apple	8	
Arch Rock	10	
AT&T	10, 33	
<b>■ B</b>		
BlueLock	14	
Broadcom	34	
<b>■ C</b>		
Canonical	10	
Check Point	18	
Cisco	1, 18, 20, 34	
Citrix	12	
Cloudmark	19	
ConSentry	18	
<b>■ E</b>		
EMC	32	
Emulex	34	
<b>■ H</b>		
HP	10	
<b>■ I</b>		
IBM	1	
Imanami	19	
Intel	16	

<b>■ L</b>		
Liquid Computing	34	
<b>■ M</b>		
McAfee	18, 20	
Microsoft	10, 12, 20	
Mophie	24	
<b>■ O</b>		
Oracle	1, 8, 16	
<b>■ S</b>		
Savvis	12, 14, 20	
Sprint	8	
Sun	1, 8, 16	
SunGard	12, 14	
<b>■ T</b>		
Teletronic	14	
Terremark	12, 14	
Trend Micro	1	
T-Systems	14	
<b>■ U</b>		
Unisys	19	
<b>■ V</b>		
VMware	8, 12, 14	

## ■ Advertiser Index

Advertiser	Page #	URL
1&1 Internet AG	2-3	www.1and1.com
Avaya	25	www.networkworld.com/community/uc
CA Inc	6	ca.com/spectrum
CA Inc	11	ca.com/security
CA Inc	23	ca.com/apm
CDW Corp	9	cdw.com
DNSstuff	21	DNSstuff.com
dtSearch Corp	36	www.dtsearch.com
Hewlett Packard	39	hp.com/servers/virtual12
IBM Corp	15	ibm.com/dynamic
IBM Corp	17	ibm.com/connected
IBM Corp	31	ibm.com/systems/knowyourenergy

IBM Corp	33	ibm.com/systems/energysaver
IT Watchdogs	36	ITWatchdogs.com
Microsoft Corp	40	SQL ServerEnergy.com
Novell Inc	13	novell.com/evolution
Sensaphone	36	www.sensaphone.com
SonicWall	19	www.sonicwall.com/vstape
SunGard	29	www.availability.sungard.com/sg1
Tenable Network Security	35	TenableSecurity.com
Trend Micro Inc	27	trendmicro.com/thinkagain
Verizon Wireless	4	verizonwireless.com/business

These indexes are provided as a reader service. Although every effort has been made to make them as complete as possible, the publisher does not assume liability for errors or omissions.

\*Indicates Regional Demographic

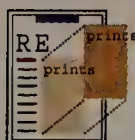
### ■ International Data Group

Chairman of the Board, Patrick J. McGovern

### ■ IDG Communications, Inc.

CEO, Bob Carrigan

*Network World* is a publication of IDG, the world's largest publisher of computer-related information and the leading global provider of information services on information technology. IDG publishes over 300 computer publications in 85 countries. One hundred million people read one or more IDG publications each month. *Network World* contributes to the IDG News Service, offering the latest on domestic and international computer news.



Publicize your press coverage in *Network World* by ordering reprints of your editorial mentions. Reprints make great marketing materials and are available in quantities of 500 and up. To order, contact the YGS Group, (800) 290-5460 ext. 148 or e-mail [networkworld@theygsgroup.com](mailto:networkworld@theygsgroup.com).

## NetworkWorld®

### Events and Executive Forums

Network World Events and Executive Forums produces events including IT Roadmap, DEMO and The Security Standard. For complete information on our current event offerings, call us at 800-643-4668 or go to [www.networkworld.com/events](http://www.networkworld.com/events).

## ■ Network World, Inc.

492 Old Connecticut Path, Framingham, MA 01701-9002  
Phone: (508) 766-5301

### TO SEND E-MAIL TO NWW STAFF

firstname\_lastname@nww.com

CEO: Mike Friedenberg  
Executive VP/General Manager: John Gallant  
Group Publisher: Bob Melk  
Publisher: Dan Hirsh

### ONLINE SERVICES

VP/Sales: Brian Glynn  
Manager, Online Account Services: Danielle Tetreault

### CUSTOM SOLUTIONS

VP, Custom Solutions Group: Matt Avery  
National Director, Custom Solutions: Karen Wilde  
Custom Solutions, Project Manager: Anna Randag

### SEMINARS, EVENTS AND IDG EXECUTIVE FORUMS

Executive VP, Events/Executive Forums: Neal Silverman  
VP, Event Sales: Andrea D'Amato  
VP, Event Marketing/Business Dev.: Mike Garity  
Director of Event Operations: Dale Fisher

### MARKETING

VP Marketing: Sue Yanovitch

### AD OPERATIONS

Senior Production Manager: Jami Thompson  
Advertising Coordinator: Maro Eremyan

### FINANCE

VP Finance: Mary Fanning

### HUMAN RESOURCES

Director of Human Resources: Patricia Chisholm, VP, Human Resources

### CIRCULATION/SUBSCRIPTION

Circulation Manager: Diana Turco, (508) 820-8167

### IDG LIST RENTAL SERVICES

Director of List Management, Steve Tozeski  
Toll free: (800) IDG-LIST (US only)/Direct: (508) 370-0822

## ■ Sales

VP/Associate Publisher: Sandra Kupiec

### Northeast/Midwest/Central

Elisa Della Rocco, Regional Account Director  
(201) 634-2300/FAX: (201) 634-9286

### Southeast/Mid-Atlantic

Jacqui DiBianca, Regional Account Director  
(610) 971-0808/FAX: (201) 621-5095

### Northern California/Northwest

Vanessa Tormey, Regional Account Director  
(206) 973-5583

### Silicon Valley/Southwest

Correta Wright, Regional Account Director  
(415) 267-4515

### Emerging markets

Enku Gubaie, Regional Account Executive  
(508) 766-5487

### Online

Debbie Lovell, Online Account Director  
Northeast/Midwest/Central (508) 766-5491  
Gena Grossberg, Online Account Executive, East  
(201) 634-2315  
Katie Layng, Online District Manager, Northern  
California/Northwest/Rockies/Utah (415) 267-4518  
Jessica Koch, Online Regional Account Manager,  
Silicon Valley/Southwest (415) 267-4522

### Custom Solutions

Karen Wilde, National Director, Custom Solutions Group  
(415) 267-4512

### ■ EVENT SALES

#### DEMO

Neal Silverman, Executive Vice President, Network  
World Events & Demo (508) 766-5463

#### Custom Events

Andrea D'Amato, Vice President, Event Sales  
(508) 766-5455

#### IT Roadmap

Jennifer Sand, Regional Account Director, Western  
Regional (415) 267-4513  
Michael McGoldrick, Regional Account Director,  
Eastern Region (508) 766-5459  
Grace Moy, Regional Account Manager, National  
(508) 766-5461





## BACKSPIN

Mark Gibbs

# Security: The ugly business

**S**ecurity is an ugly business because when you have a problem there's rarely an elegant, straightforward solution. What you usually wind up with is a solution that's just "good enough." I recently learned of a great example that illustrates this point.

I read an amazing report titled "ATM Card Skimming and PIN capturing Awareness Guide" (see [www.nwdocfinder.com/9749](http://www.nwdocfinder.com/9749)) published by Commonwealth Bank, a large Australian financial services provider.

Card skimming is the art of stealing data from the magnetic stripe on the back of an ATM card. The devices used to do this are smaller than a deck of cards and (this is the biggie) "often fastened in close proximity to or over the top of an ATM's factory-installed card reader."

Then the crooks typically install another piece of equipment to capture the PIN associated with the user's card. These devices have been found in the lights that illuminate the ATM's keyboard, near the speaker, in the indent that houses the screen, or even over the keyboard.

The report offers photographs of machines that have been modified with card skimming devices and the amazing thing is they all look like bona fide parts of the ATM. There is little visual clue that the device you're pushing your card into is an add-on.

The same applies to the PIN capturing modifications, most of which seem to involve cameras mounted in things such as false fascias that are attached to the ATMs or in leaflet holders. Another approach is to overlay a false keypad on the real keypad.

According to the report the bad guys "tend to attach skimming devices either late at night or early in the morning, and during periods of low traffic ... [and usually only leave them] attached for a few

hours."

And the advice the report offers on how to fight back? There are several suggestions but let me summarize: Know thy ATM.

This is, of course, a poor solution because it assumes that those charged with the care and feeding of ATMs will be diligent and painstaking. While a percentage might well be, we know for certain that in a large population of these workers at least a few will not.

Second, what they are trying to do is work around a fundamental design flaw. If you can't easily distinguish a modified machine from one that hasn't been, then mistakes will be made even by the most diligent ATM wranglers and security will be breached.

This is a classic risk management problem: We've rolled out a solution that is in wide use and we have now identified a serious problem.

We have two choices: Go to the expense and trouble of redesigning the solution knowing that whatever we do is unlikely to solve the problem perfectly, or devise a workaround as Commonwealth Bank has done (if you can call asking stuff to be more diligent a workaround) and face larger losses but avoid the huge costs associated with a redesign.

In the case of ATMs there's also consumer confidence to consider. Some banks are exploring use of one-time codes generated by handheld devices that would thwart the skimming/capturing problem, but devices can be easily lost and it would be yet another gizmo you would have to carry.

This ATM security issue is exactly like many other IT security problems in that there is no "best solution", there is only a solution that is less ugly than the alternatives.

*Gibbs is secure in Ventura, Calif. He thinks. Confess your exposure to [backspin@gibbs.com](mailto:backspin@gibbs.com).*



Paul McNamara

## NETBUZZ

News, Insights, oddities

# Politicians need their own slice of the 'Net

**O**n the surface, Washington attorney Matt Sanderson would appear to be pitching a tough sell: special protection online for politicians. However, because the villains here are predatory criminals and cybersquatters, it should be easy enough for all but the anarchists to see that he has a point.

In a recent column in the *Washington Post*, Sanderson makes the case for ICANN to institute a .pol top-level domain that would be reserved exclusively for real politicians and candidates ... and be off limits to the speculators.

He cites as examples of the need the troubles encountered by President Obama and former eBay CEO Meg Whitman in securing eponymous .com names in advance of running for president and governor of California. Both eventually bought off their cybersquatters.

Boo-hoo, you say? Whitman's a billionaire and Obama raised enough money online to bail out the auto industry. ... Well, this isn't merely about the money, or even primarily about it.

Sanderson writes: "In 2004, for example, a cybersquatter deceitfully solicited funds through JohnFKerry-2004.com, which was nearly identical to Sen. John Kerry's authorized site. Likewise, in 2008, the cybersquatter site JohnMcain.com featured a contribution page almost indistinguishable from the similarly spelled official campaign site, JohnMcCain.com. Such counterfeit contribution pages raise serious monetary- and identity-theft concerns."

At least these crooks are non-partisan.

Reading Sanderson's column prompted a few questions so I e-mailed him asking, among other things: Given that .com dominates the public's consciousness, wouldn't candidates still be compelled to fight for and or buy the .com versions of their campaign sites lest those .com

sites be used against them? In other words, is it fair to say that .pol would be at best a partial solution?

His reply: "No, I don't think it is a partial solution. In the long term, most Internet users would grow accustomed to visiting .pol sites to volunteer, contribute, etc., much the way they now know to visit .edu to visit a university's official site. Eventually, candidates would not feel any more compelled to purchase a .com site than a university does."

"In the short term, though, you are right that many users will want to turn to .com sites. But even though this is the case, I think .pol would help significantly reduce the price that cybersquatters are able to fetch for a domain name."

There was more to our exchange, which, if you're interested, can be read at [www.nwdocfinder.com/9731](http://www.nwdocfinder.com/9731).

## Democracy in action on Facebook?

In February, Facebook users wailed about new terms-of-service language they saw paving the way for Facebook to sell their every scribbling and photo to the highest bidder. The company backed off the changes and opened up a dialogue with interested parties to craft another version. ... Good move.

Then Facebook went one step further by offering users an opportunity to vote: Do you want the newly drafted terms that include all the privacy-protecting goodness collected from concerned parties? Or, would you prefer the original legalese? ... What could be more democratic?

Well, there was a catch. Facebook attached to the referendum a condition, namely that 30% of its 200 million active users — roughly 60 million — would need to participate for the results to be binding.

Only about 650,000 of us voted (three-quarters picked the new terms, which presumably will be adopted). Next time, let's skip the faux vote.

*Direct your fine print to [buzz@nww.com](mailto:buzz@nww.com).*



# Deal with the virtual — and reality.

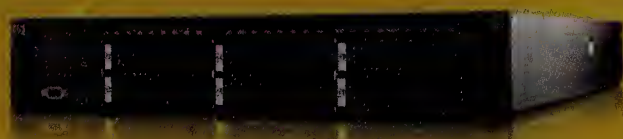
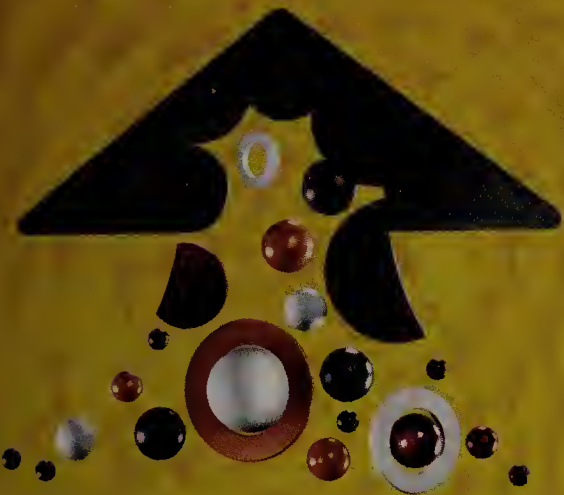
ALTERNATIVE THINKING ABOUT CONTROL AND CONSOLIDATION:

**Manage and optimize your virtual and physical servers  
in the same way with HP Insight Dynamics — VSE.**

When it comes to IT, your universe is always expanding. Needs increase, resources are stretched and options can be limited. But now, you can rethink how you control and optimize your physical and virtual servers by integrating them with one powerful software solution, Insight Dynamics — VSE. Now you can increase flexibility, improve cost and energy efficiency, and simplify daily operations.

Supporting this technology is HP's commitment to service and dependability — a point of difference that led IDC to name HP the #1 vendor for virtualization.\*

Technology for better business outcomes.



## HP ProLiant DL Servers

- Quad-Core AMD Opteron™ Processor, with AMD Virtualization™ technology
- Ideal for general-purpose solutions and high-performance computing
- Affordable, modular rack systems to give your IT department the flexibility to expand with your business



## HP BladeSystem c-Class

- Quad-Core AMD Opteron™ Processor, with AMD Virtualization™ technology
- Infrastructure-in-a-box saves you time, power and money by reducing repetitive parts and redundant operations
- Add, replace and recover resources on the fly without rewiring



To learn more, call 1-888-277-5467 or visit [hp.com/servers/virtual12](http://hp.com/servers/virtual12)



AMD, the AMD arrow logo, AMD Opteron and combinations thereof, are trademarks of Advanced Micro Devices, Inc.

© 2009 Hewlett-Packard Development Company, L.P. The information contained herein is subject to change without notice.

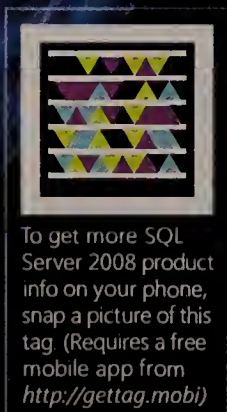
\*Source: IDC Quarterly Server Virtualization Tracker, October 2008.



Your potential. Our passion.  
**Microsoft**

## Announcing a shocking development in data management.

Managing data with Microsoft® SQL Server® 2008 Enterprise lets you turn that data into a new form of energy for your company. Here's how: with built-in advanced Data Compression you can store and manage growing volumes of data more efficiently to reduce storage costs. Oracle charges extra for this functionality.\* A lot extra. Discover more energy at **SQLServerEnergy.com**



Microsoft  
**SQL Server 2008**

\*Pricing is based on Microsoft estimated retail price and published Oracle prices available at <http://www.oracle.com/corporate/pricing/technology-price-list.pdf> as of 1/29/2009. Actual reseller prices may vary.